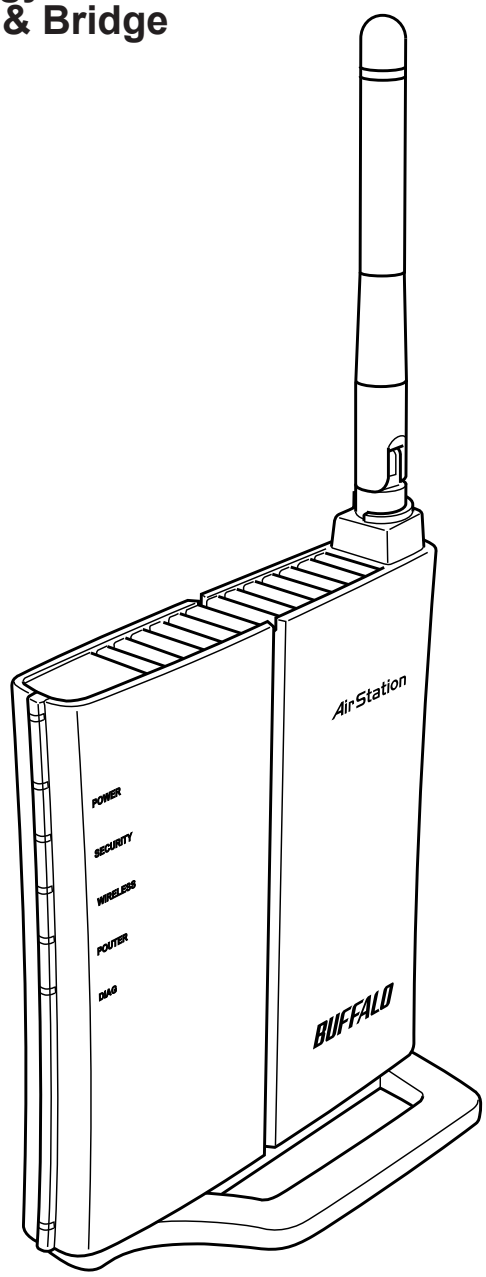
User Manual

WCR-GN / WCR-HP-GN

AirStation N Technology Wireless N150 Router, Access Point, & Bridge



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Chapter 1 - Product Overview

Features

Supports IEEE802.11n and IEEE802.11b/g

With support for Wireless-N, Wireless-G, and Wireless-B standards, the AirStation can transfer data to and from all standard 2.4 GHz wireless clients.

Supports WDS

WDS bridging allows multiple units to operate in a bridged network for extended coverage.

Dual speed mode

Dual speed mode makes wireless transmission faster by using 2 channels, allowing 150 Mbps data transmission.

Support AOSS and WPS

Both AOSS (AirStation One-touch Secure System) and WPS (Wi-Fi Protected Setup) are supported. These automatic connection standards make connection with compatible wireless devices easier.

Security Features

The AirStation is equipped with the following security features:

- AOSS
- WPS
- WPA-PSK (TKIP/AES)
- WPA2-PSK(TKIP/AES)
- WPA/WPA2 mixed PSK
- WEP(128/64 bit)
- Privacy Separator
- MAC address access restriction
- Deny Any Connection/SSID stealth
- Web configuration interface with password
- Firewall with easy rules

Automatic Channel Selection

Monitors wireless interference and automatically assigns the clearest, best channel.

Initialization

To restore settings back to the factory defaults, hold down the Reset button on the bottom of the unit.

Browser Based Administration

This unit can be easily configured from a web browser on your computer.

150 Mbps High Speed Mode

150 Mbps is the link speed of AirStation when using Wireless-N mode. It represents actual wireless data speeds, including overhead. Because the overhead is not available for user data transfer, usable wireless throughput will be substantially slower.

Package Contents

Following items are included in your AirStation. If any of the items are missing, please contact your vender.

WCR-GN

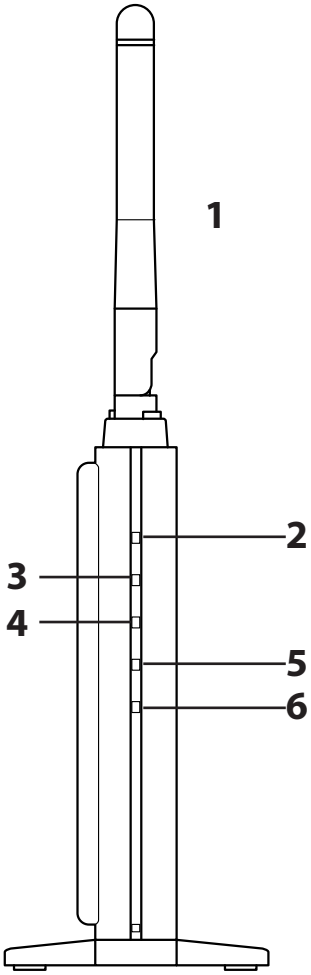
- Main unit.....1
- Stand 1
- AC adapter.....1
- LAN cable.....1
- AirStation Utility CD.....1
- Quick Setup Guide.....1

WCR-HP-GN

- Main unit.....1
- Detachable antenna 1
- Stand 1
- AC adapter.....1
- LAN cable.....1
- AirStation Utility CD.....1
- Quick Setup Guide.....1

WCR-GN Hardware Overview

Front Panel LED's



1 Flexible antenna
Adjust the angle for the best signal as needed. Turning the unit so that the antenna points straight up will probably give the strongest signal.

2 Power LED (Green)
On: The AC adapter is connected
Off: The AC adapter is not connected

3 Security LED (Amber)
Indicates security status.
Off: Encryption is not set
On: Encryption has been set
Double blink: The unit is waiting for an AOSS or WPS security key
Blinking: AOSS/WPS error; failed to exchange security keys
Note: When the Security LED is lit, an encryption key has been set. Wireless clients will need the same key to connect.

4 Wireless LED (Green)
Indicates wireless LAN status.
Blinking: Wireless LAN is transmitting
On: Wireless LAN is connected but not active

5 Router LED (Green)
On: Router functionality is enabled
Off: Router functionality is disabled

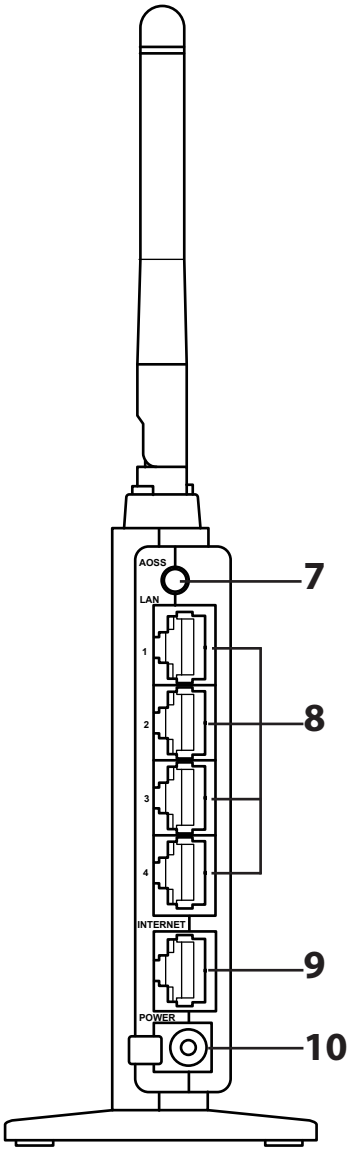
6 Diag LED (Red)
This indicates the status of the unit depending on the number of blinks per cycle.
Note: When the unit is first turned on or restarted, the Diag LED will blink for almost a minute during boot. This is normal.

Diag LED status	Meaning	Status
2 blinks *1	Flash ROM error	Cannot read or write to the flash memory.
3 blinks *1	Ethernet (wired) LAN error	Ethernet LAN controller is malfunctioning.
4 blinks *1	Wireless LAN error	Wireless LAN controller is malfunctioning.
5 blinks	IP address setting error	Because the network addresses of both the Internet port (INTERNET port) and the LAN port are the same, it is not possible to establish communication. Change the LAN side IP address of this unit.
Continuously blinking *2	Updating the firmware Saving settings Initializing settings	Updating the firmware. Saving the settings. Initializing the settings.

*1 Unplug the AC adapter from the wall socket, wait for a few seconds, and then plug it again. If the light still flashes, please contact technical support.

*2 Never unplug the AC adapter while the Diag LED is blinking continuously.

Back Panel



7 AOSS Button

Hold down this button until the Security LED flashes (about 1 second), while the unit's power is on, initiates AOSS/WPS mode, allowing the unit to exchange security keys with AOSS or WPS compatible devices.

8 LAN Port

Connect your computer, hub, or other Ethernet devices to these ports. This switching hub supports 10 Mbps and 100 Mbps connections.

9 Internet (WAN) Port

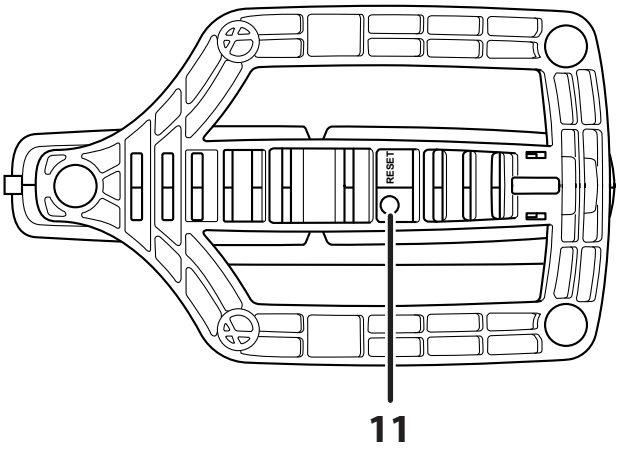
10 Mbps and 100 Mbps connections are supported.

Note: In bridge/AP mode, the Internet port becomes a regular LAN port, for a total of 5 usable LAN ports.

10 Power Connector

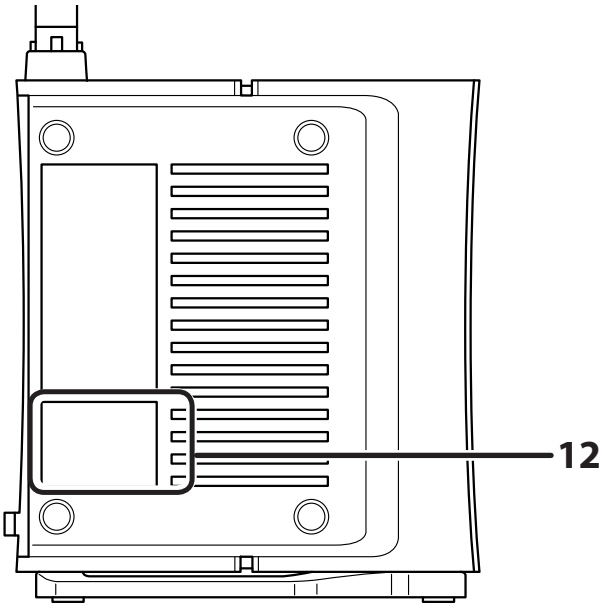
Connect the included AC adapter.

Bottom



11 Reset Button With the power on, hold down this button until the Diag LED comes on to initialize the AirStation's settings to their default values.

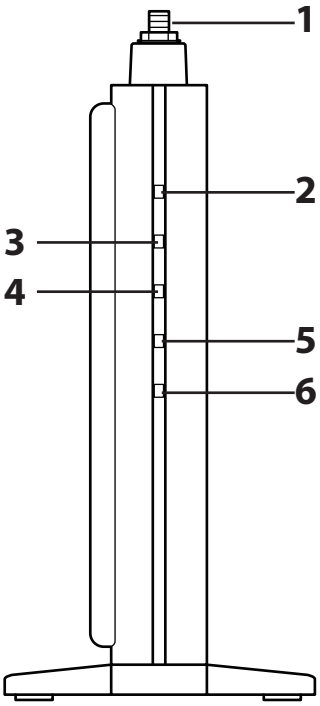
Right Side



12 Factory Default Settings This sticker shows the AirStation's SSID, default encryption key, and WPS PIN code. By default, encryption key is disabled for Asia Pacific.

WCR-HP-GN Hardware Overview

Front Panel LED's



1 Antenna connector
Screw on the antenna here.

2 Power LED (Green)

On: The AC adapter is connected
Off: The AC adapter is not connected

3 Security LED (Amber)

Indicates security status.

Off: Encryption is not set
On: Encryption has been set
Double blink: The unit is waiting for an AOSS or WPS security key
Blinking: AOSS/WPS error; failed to exchange security keys
Note: When the Security LED is lit, an encryption key has been set. Wireless clients will need the same key to connect.

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Indicates wireless LAN status.

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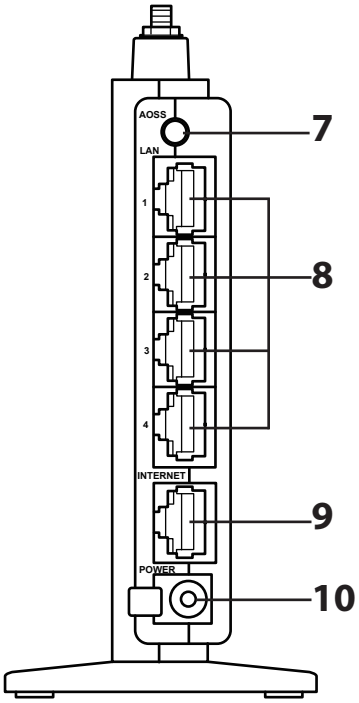
*2 Never unplug the AC adapter while the Diag LED is blinking continuously.

Back Panel



7 AOSS Button

Hold down this button until the Security LED flashes (about 3 seconds), while the unit's power is on, initiates AOSS/WPS mode, allowing the unit to exchange security keys with AOSS or WPS compatible devices.

8 LAN Port

Connect your computer, hub, or other Ethernet devices to these ports. This switching hub supports 10 Mbps and 100 Mbps connections.

9 Internet (WAN) Port

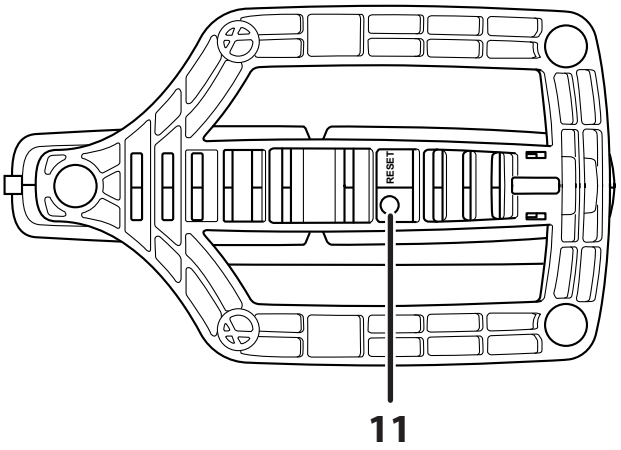
10 Mbps and 100 Mbps connections are supported.

Note: In bridge/AP mode, the Internet port becomes a regular LAN port, for a total of 5 usable LAN ports.

10 Power Connector

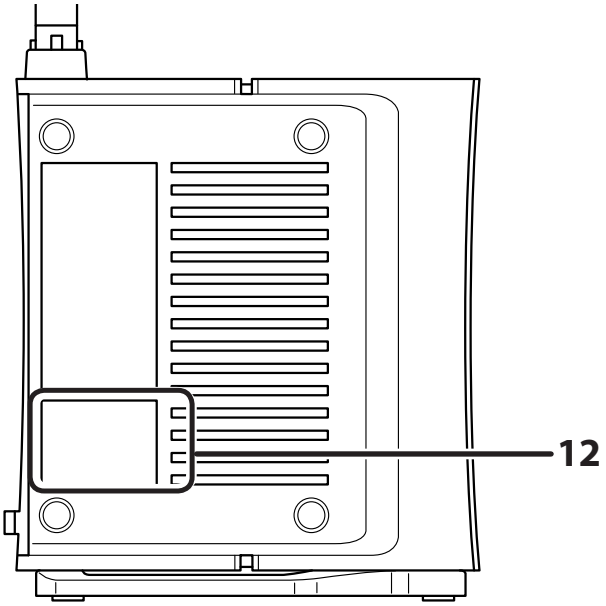
Connect the included AC adapter.

Bottom



11 Reset Button With the power on, hold down this button until the Diag LED comes on to initialize the AirStation's settings to their default values.

Right Side

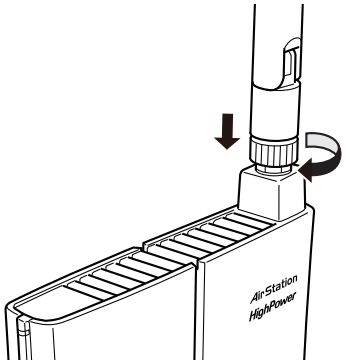


12 Factory Default Settings This sticker shows the AirStation's SSID, default encryption key, and WPS PIN code. By default, encryption key is disabled for Asia Pacific.

Chapter 2 - Placing Your AirStation

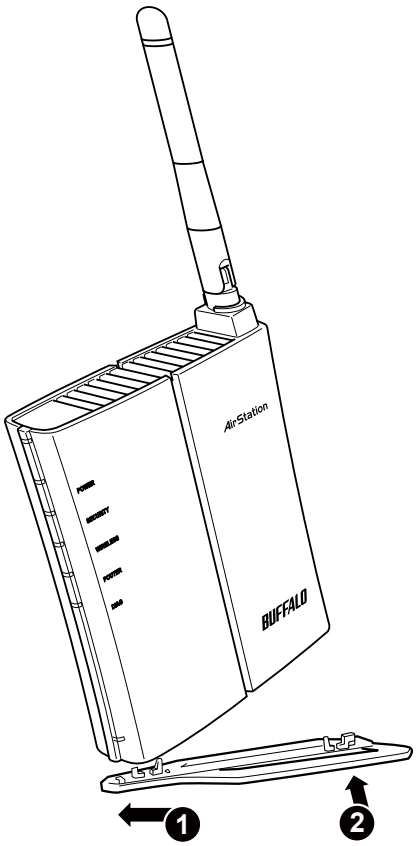
Antenna Placement

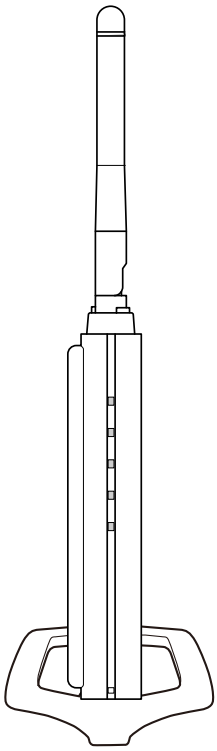
The WCR-GN has a fixed antenna. For the WCR-HP-GN, screw on the included antenna here.



Vertical Placement

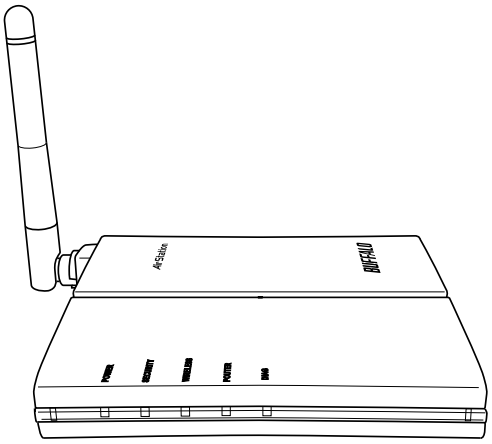
To place unit vertically, attach the stand as shown below.





Horizontal Placement

For horizontal placement, the stand is not used.



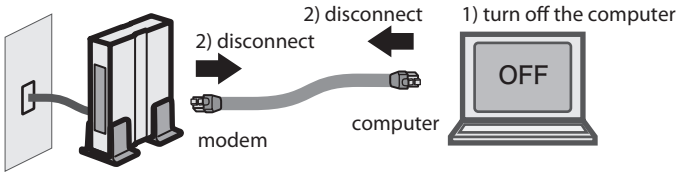
Chapter 3 - Installation

Initial Setup

To configure your AirStation, follow the procedure below.

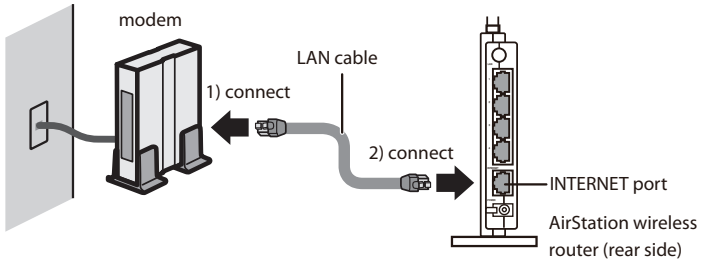
1 Turn off your computer and modem. If the modem doesn't have an off switch, unplug its power connector.

2

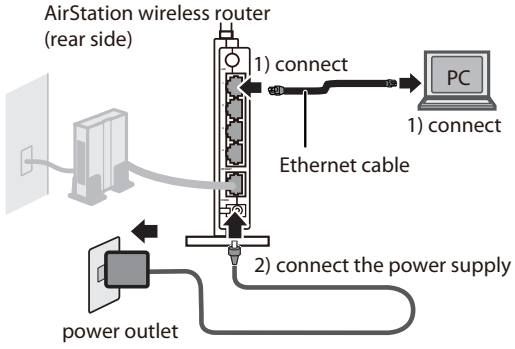


Find the LAN cable that connects your computer and modem. Unplug it from the computer.

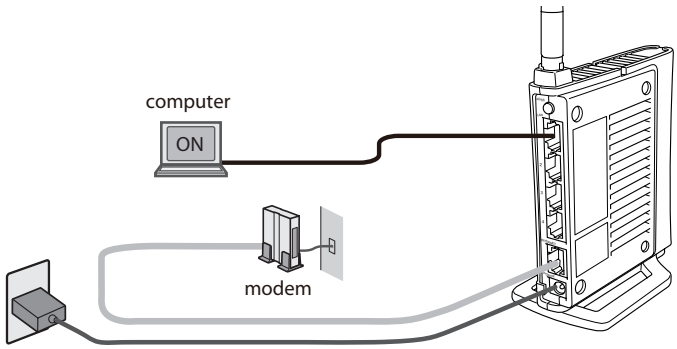
3 Plug the LAN cable from the modem into the Internet (WAN) port of your AirStation. Turn on the modem.



4 Connect your computer to one of the AirStation's LAN ports with the Ethernet cable. Turn on the AirStation, wait one minute, and then turn on your computer.



5 Confirm the devices are connected correctly as the below diagram shows.



6 Wait for a minute or so, until the AirStation's LEDs are lit as described below:

Power	Green light is on
Wireless	Green light is on
Router	Green light is on
Diag	Off
LAN	Green light is on or blinking
Internet	Green light is on or blinking

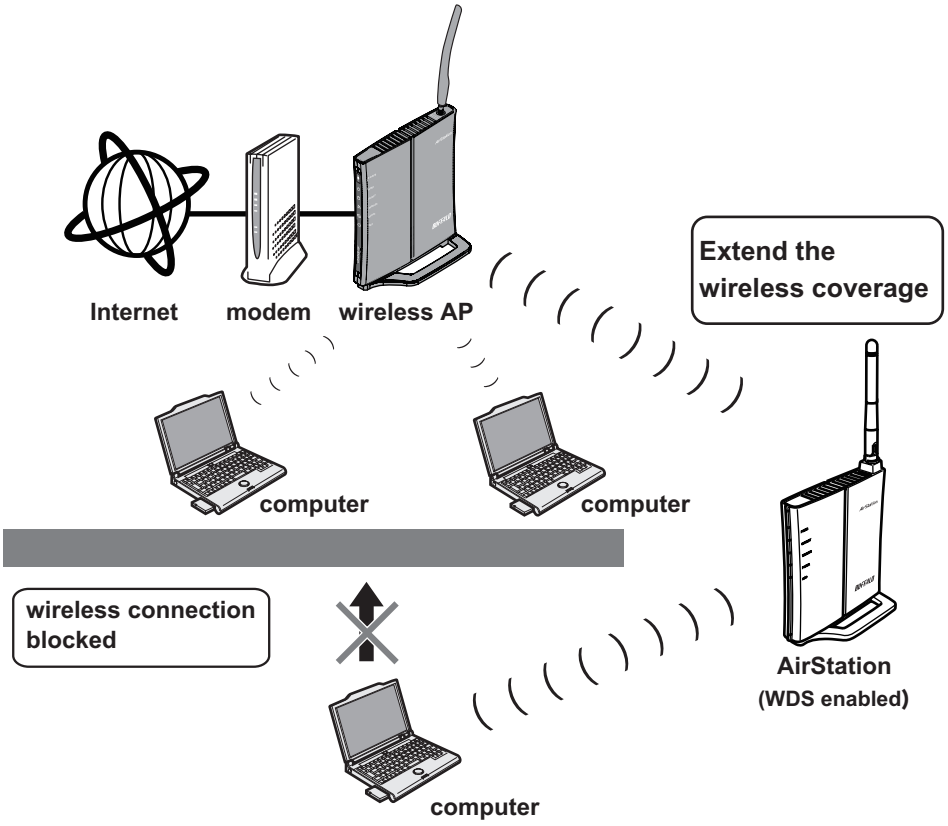
※ Refer to chapter 1 for LED locations and other details.

7 Launch a web browser. If the [home] setup screen is displayed, setup is complete. If a user name and password screen are displayed, enter [root] (in lower case) for the user name, leave the password blank, and click [OK]. Follow the instructions on the screen to complete setup.

You've completed initial setup of your AirStation. Refer to Chapter 4 for advanced settings.

WDS Setup

To configure the WDS, follow the procedure below.

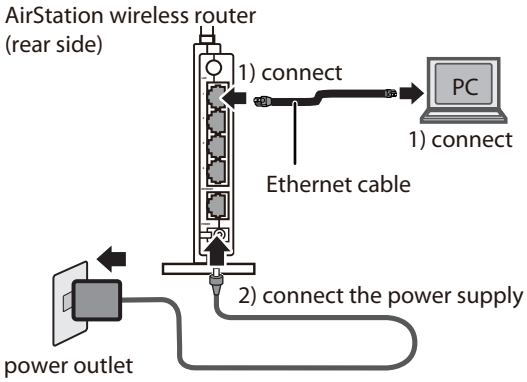


1 Change your computer's IP to a fixed address. For details, please refer to Appendix D (page 101).

ex) IP address 192.168.11.80
Subnet mask 255.255.255.0
Default gateway blank
Preferred DNS server blank
Alternate DNS server blank

2 Turn off your computer.

3 Connect your computer to one of the AirStation's LAN ports with the Ethenet cable. Turn on the AirStation, wait one minute, and then turn on your computer.



4 Wait for about a minute, until the AirStation's LEDs are lit as described below:

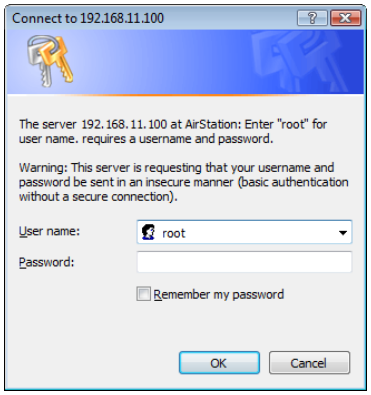
Power	Green light is on
Wireless	Green light is on
Router	Green light is on
Diag	Off

※ Refer to chapter 1 for LED locations and other details.

5 Open the web configuration interface (page 23).

6 In the [Mode information] menu, select [Bridge Mode], then click [Apply].

7



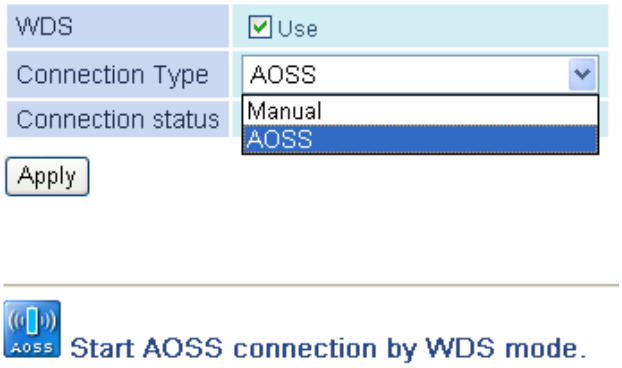
When this below screen appears, re-enter the web configuration interface username "root" and password. Click [OK].

8 The web configuration interface will open. Click [Wireless Config] , then [WDS].

9 Check [Use].

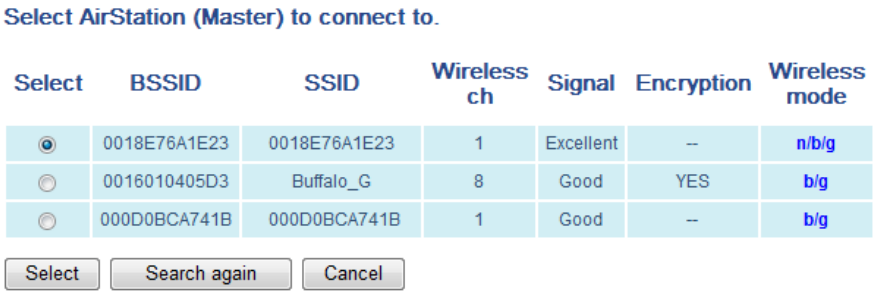
10 Follow the directions below.

AOSS Settings
Select [AOSS] from [Connection type] and click the AOSS button. Also push the AOSS button on the unit intended to connect. Automatic configuration will take about a minute. To return the unit to its original IP address settings, refer to Appendix D.

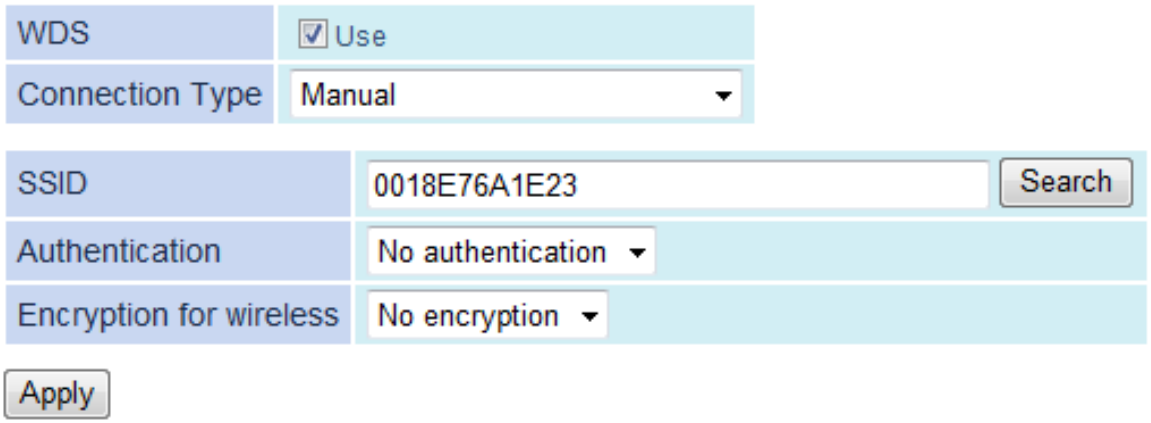


Manual Settings
Select [Manual] from [Connection type]. Then click [Search].

11 A list of available wireless APs will be generated. Select the target AP and click [Select]. Click [Search again] if no APs are found.



12 Configure the security settings to match that of the target AP, then click [Apply].



13 Revert your computer's IP adress settings to their original values as secribed in Appendix D (page 101).

ex) IP address — obtain an IP address automatically
Subnet mask — obtain DNS server address automatically

WDS setup is complete. Refer to Chapter 4 for advanced settings.

Chapter 4 - Configuration

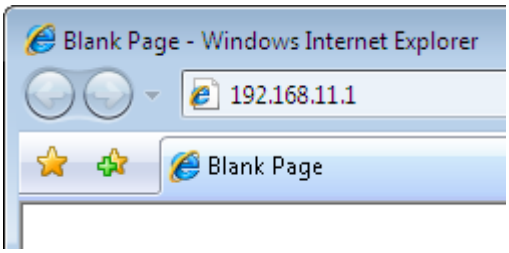
To access the AirStation's advanced settings, use the web-based configuration interface.

Accessing the Web-based Configuration Interface

Follow the procedure below to open the web-based configuration interface.

1 Launch a web browser.

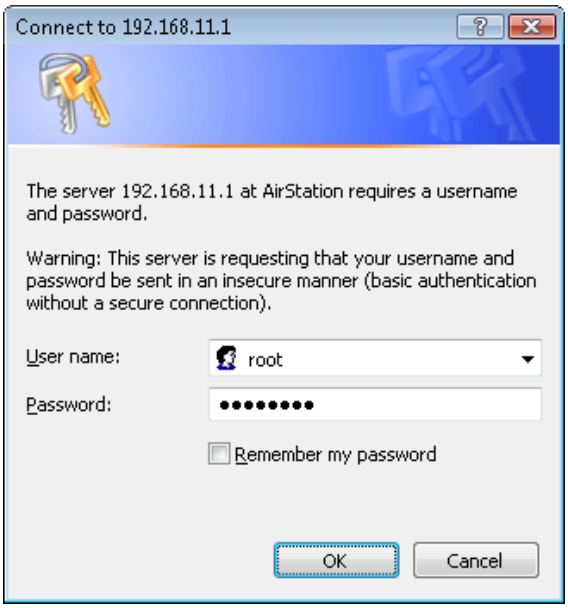
2



Enter the router's LAN-side IP address in the address field, and press the [Enter] key.

Note: ・The AirStation's default LAN-side IP address depends on its mode setting.
In router mode: 192.168.11.1
In bridge mode: 192.168.11.100
・If you changed the IP address setting, then use the new IP address.

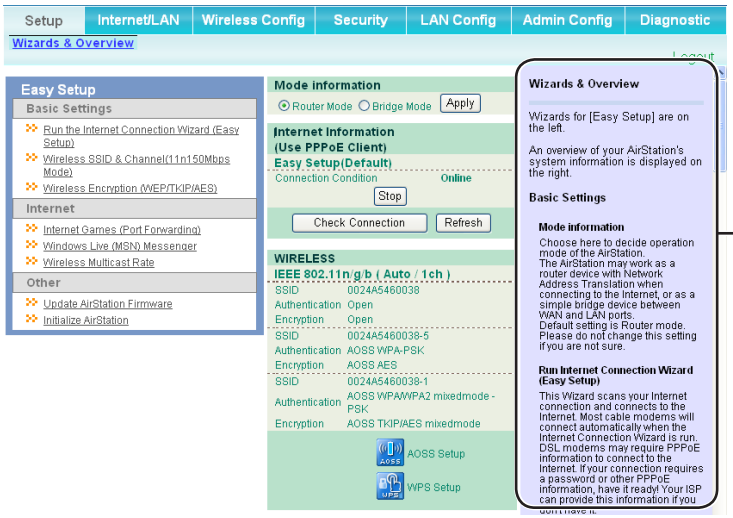
3



Enter [root] (lower case) for the username and the password that you set during initial setup. Click [OK].

Note: ・By default, the password is blank (not set).
・If you forget your password, hold down the Reset button (page 10) to initialize all settings. The password will then be blank.
Note that all other settings will also revert to their default values.

4



The configuration interface is displayed.

Help is always displayed on the right side of the configuration interface. Refer to the Help screens for more information on each page.

Configuration Menu (Router Mode)

The menu structure for the AirStation in router mode is the following. Please refer to the pages listed at right for explanations of each item.

Main screen	Descriptions	Page
Internet/LAN		
Internet	Configure Internet side port and settings	Page 31
PPPoE	PPPoE settings (DSL login)	Page 32
DDNS	DNS settings	Page 34
LAN	LAN side port and DHCP server configuration	Page 36
DHCP Lease	DHCP lease settings	Page 38
NAT	Network address translation settings, used to connect LAN side devices to the Internet	Page 39
Route	Configure the IP communication route that the AirStation uses	Page 40
Wireless Config		
WPS	WPS settings and status	Page 41
AOSS	AOSS (AirStation One-touch Secure System) settings and status	Page 42
Basic	Configure basic wireless settings	Page 44
Advanced	Configure advanced wireless settings	Page 48
WMM	Set priorities for Wireless Multimedia Extensions (Wi-Fi Multimedia)	Page 49
MAC Filter	Limit access to specific devices	Page 51
Security		
Firewall	Protect your computer from outside intruders	Page 54
IP Filter	Edit IP filters which relates to the packets passing through the LAN side and the Internet side	Page 56
VPN Pass-through	Configure IPv6 passthrough, PPPoE passthrough, and PPTP passthrough	Page 57
LAN Config		
Port Forwarding	Configure port translation and exceptions for games and other programs	Page 58

DMZ	Configure a destination to transfer communication packets without a LAN side destination.	Page 59
UPnP	Configure UPnP (Universal Plug and Play)	Page 60
QoS	Configure priority for packets that require a certain data flow	Page 61
Admin Config		
Name	Configure the AirStation's name	Page 62
Password	Configure the AirStation's login password for access to configuration interfaces	Page 63
Time/Date	Configure the AirStation's internal clock	Page 64
NTP	Configure the AirStation to synchronize with an NTP server to automatically set the AirStation's internal clock	Page 65
Access	Configure access restrictions to the AirStation's configuration interfaces	Page 66
Log	Configure a syslog server to manage the AirStation's logs	Page 67
Save/Restore	Save or restore the AirStation's configuration from a configuration file	Page 68
Initialize/Restart	Initialize the AirStation or reboot it	Page 69
Update	Update the AirStation's firmware	Page 70
Diagnostic		
System Info	View current system information for the AirStation	Page 71
Logs	Check the AirStation's logs	Page 73
Packet Info	View all packets transferred by the AirStation	Page 74
Client Monitor	View all devices currently connected to the AirStation	Page 75
Ping	Test the AirStation's connection to other devices on the network	Page 76
Logout		
Click this to log out of the AirStation's configuration interfaces		

Configuration Menu (Bridge Mode)

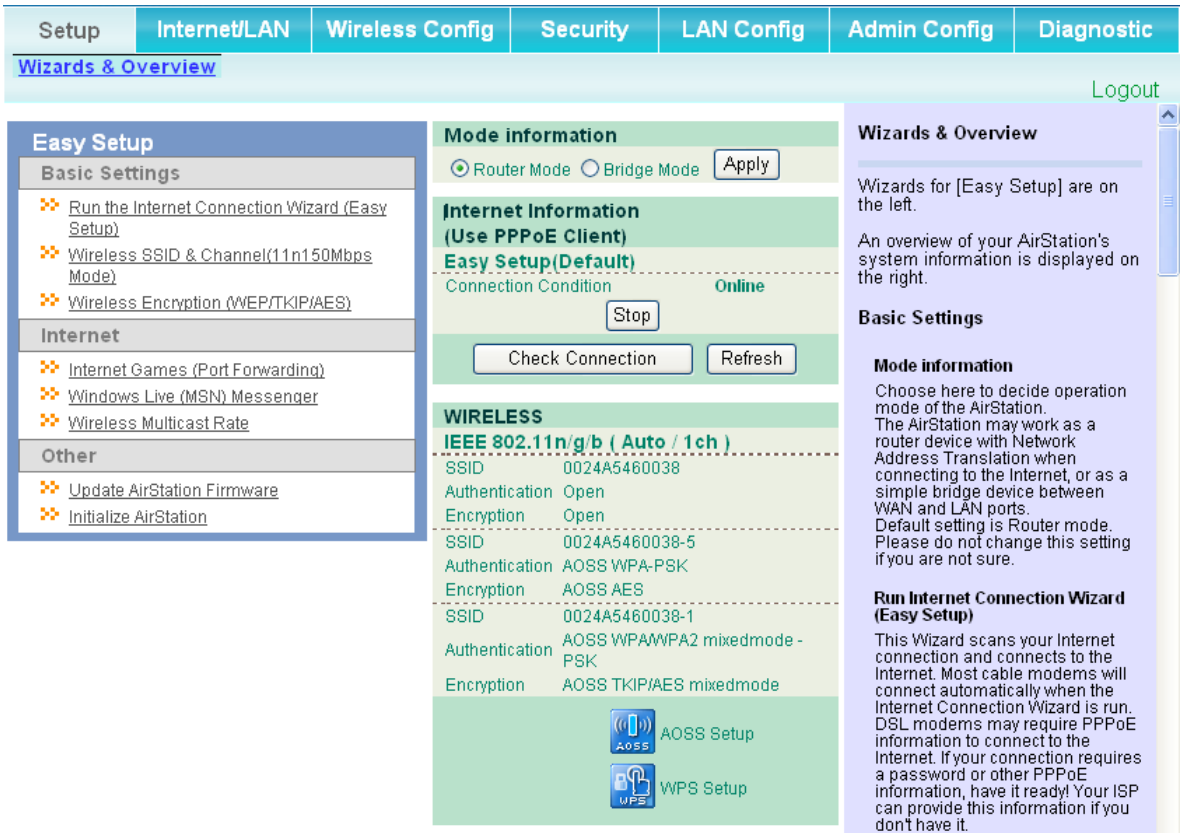
The menu structure during a bridge mode is the following. Please refer to respective page for explanations regarding to each item.

Main screen	Descriptions	Page
LAN Config		
LAN	Configure LAN side ports and devices	Page 36
Route	Configure the IP communication route that the AirStation uses	Page 40
Wireless Config		
WPS	WPS settings and status	Page 41
AOSS	AOSS (AirStation One-touch Secure System) settings and status	Page 42
Basic	Configure basic wireless settings	Page 44
Advanced	Configure advanced wireless settings	Page 48
WMM	Set priorities for Wireless Multimedia Extensions (Wi-Fi Multimedia)	Page 49
MAC Filter	Limit access to specific devices	Page 51
WDS	Configure communication among AirStation	Page 52
Admin Config		
Name	Configure the AirStation's name	Page 62
Password	Configure the AirStation's login password for access to configuration interfaces	Page 63
Time/Date	Configure the AirStation's internal clock	Page 64
NTP	Configure the AirStation to synchronize with an NTP server to automatically set the AirStation's internal clock	Page 65
Access	Configure access restrictions to the AirStation's configuration interfaces	Page 66
Log	Configure a syslog server to manage the AirStation's logs	Page 67
Save/Restore	Save or restore the AirStation's configuration from a configuration file	Page 68
Initialize/Restart	Initialize the AirStation or reboot it	Page 69
Update	Update the AirStation's firmware	Page 70
Diagnostic		
System Info	View current system information for the AirStation	Page 71
Logs	Check the AirStation's logs	Page 73
Packet Info	View all packets transferred by the AirStation	Page 74

Client Monitor	View all devices currently connected to the AirStation	Page 75
Ping	Test the AirStation's connection to other devices on the network	Page 76
Logout		
Click this to log out of the AirStation's configuration interfaces		

Setup

The home page of the configuration interface. You can verify settings and the status of the AirStation here.



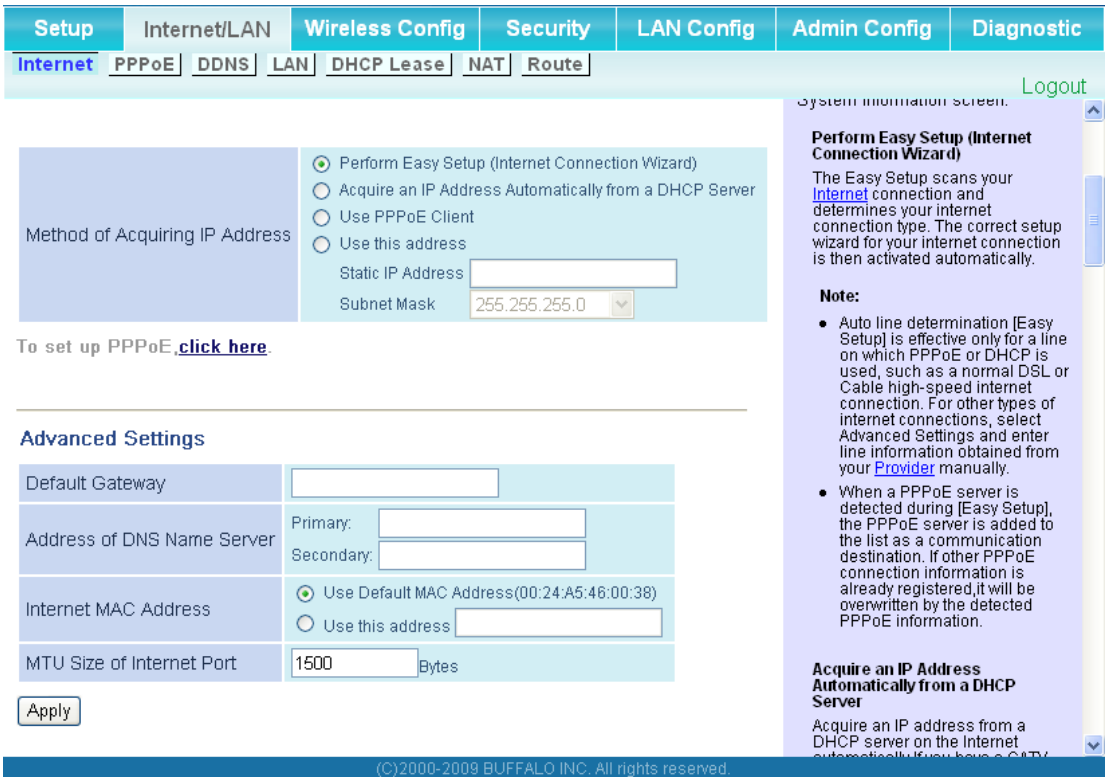
Parameter	Meaning
Internet/LAN (LAN Config)	Click this tab to display the configuration interface for the Internet port and LAN ports.
Wireless Config	Click this tab to display the configuration interface for wireless settings.
Security	Click this tab to display the configuration interface for security.
LAN Config	Click this tab to display the configuration interface to open ports for games and applications.

Parameter	Meaning
Admin Config	Click this tab to display the configuration interface which is related to the administration of the AirStation.
Diagnostic	Click this tab to display the status of the AirStation.
Easy Setup	Enable you to configure the AirStation easily such as an encryption method of the wireless signal or changing a wireless channel.
Mode Information	Switches router mode and bridge mode.
Internet Information Router mode only	Displays the current information where the AirStation is connected on the Internet side.
Check Connection Router mode only	Clicking this button to check if the AirStation is connected to the Internet properly.
Refresh Router mode only	Clicking this button to refresh the current screen.
Wireless	Displays the current wireless settings.
AOSS	Click this button to display the AOSS configuration interface.
WPS	Click this button to display the WPS configuration interface.
Language	Enable you to select the language you use. If *Auto* is selected, the same language displayed on the browser will be selected automatically.
Logout	Log out from the configuration interface of the AirStation. If the web configuration interface is not used for 5 minutes, it will log out automatically.

Internet/LAN (LAN Config)

Internet (Router Mode only)

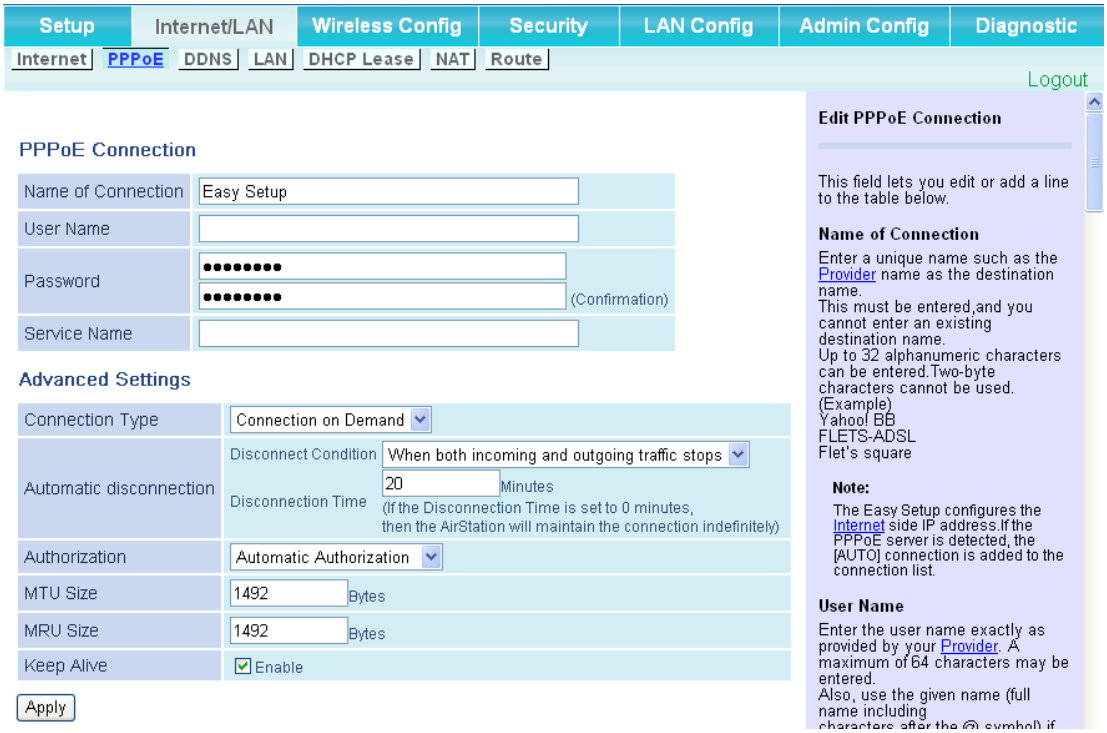
Configure the Internet (WAN) port here.



Parameter	Meaning
Method of Acquiring IP Address	Specify how the Internet side IP address is obtained.
Default Gateway	Configure an IP address for the default gateway.
Address of DNS Name Server	Specify an IP address of the DNS server.
Internet MAC Address	Configure the Internet side MAC address. Note: Configuring an improper MAC address may make the AirStation unusable. Be careful!
MTU size of Internet Port	The Internet (WAN) port's MTU size may be set to any value from 578 to 1500 bytes.

PPPoE (Router Mode only)

Configure PPPoE settings here.

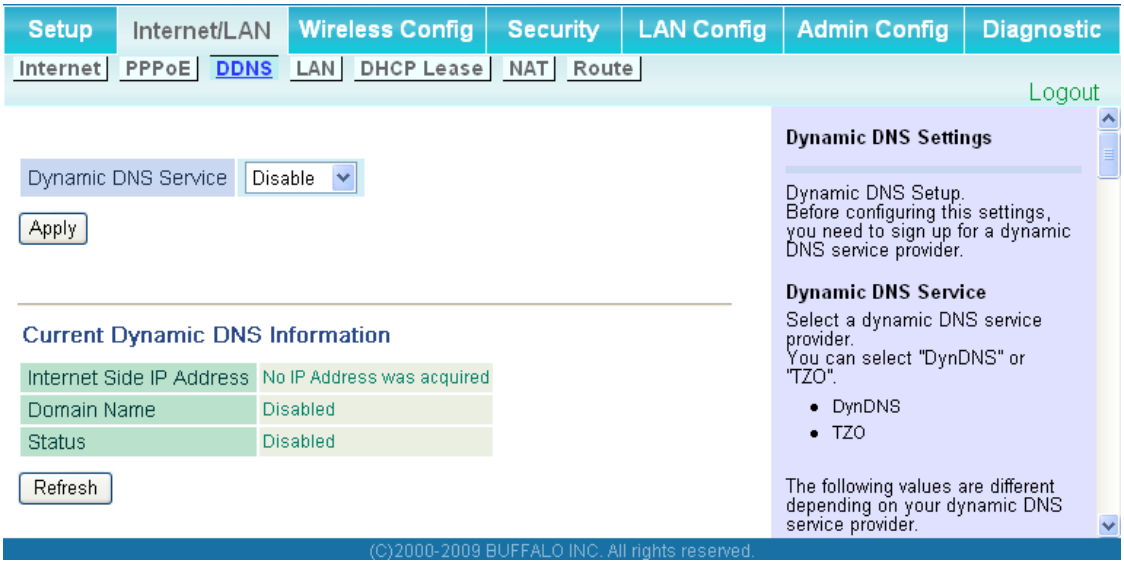


Parameter	Meaning
Name of Connection	Enter the name to identify the connected destination. You may enter up to 32 alphanumerical characters and symbols.
User Name	Set the user name which is specified by your provider, used for a PPPoE certification. You may enter up to 32 alphanumerical characters and symbols.
Password	Set the password specified by your provider for PPPoE certification. You may enter up to 32 alphanumerical characters and symbols.
Service Name	Fill in this field only when your provider specifies a Service Name. Leave blank otherwise. You may enter up to 32 alphanumerical characters and symbols.
Connection Type	Specifies the timing for the AirStation to connect to your provider.

Parameter	Meaning
Automatic disconnection	Sets the timer for disconnection if the connection method is set to [Connect on Demand] or [Manual]. You can enter up to 1440 minutes.
Authorization	Configure an authorization method with a provider.
MTU Size	The PPPoE MTU size may be set to any value from 578 to 1492.
MRU size	The PPPoE MRU (Maximum Receive Unit) size may be set to any value from 578 to 1492.
Keep Alive	If enabled, the AirStation will request an LCP echo from the PPP server once a minute. If the connection server doesn't respond within 6 minutes, the Internet connection will be cut off. If the PPP connection is often cut off, disable this.

DDNS (Router Mode only)

Configure Dynamic DNS settings here.

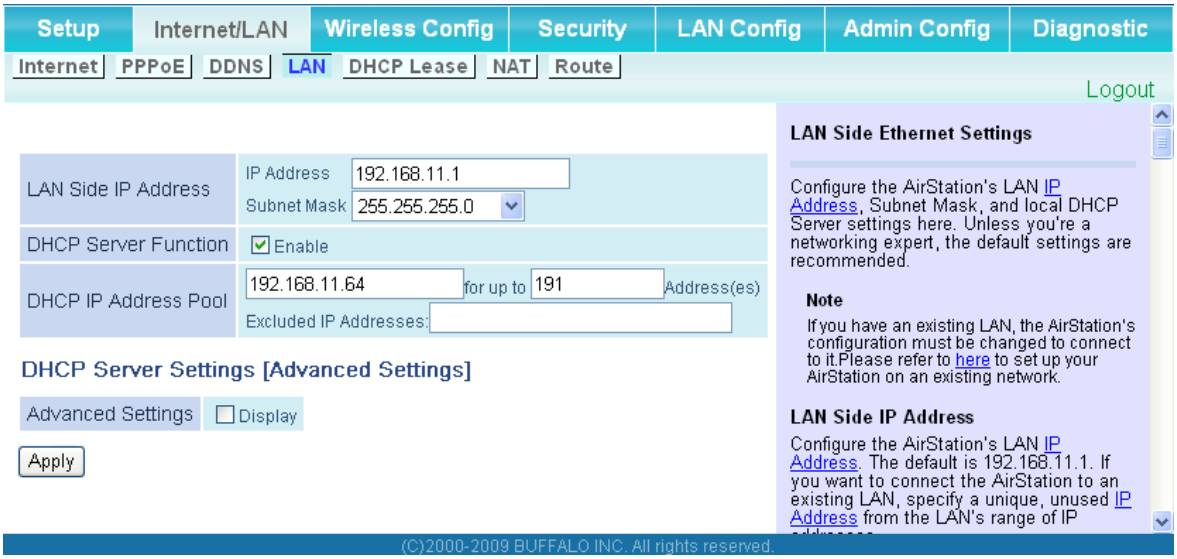


Parameter	Meaning
Dynamic DNS Service	Select a provider (DynDNS or TZO) for Dynamic DNS.
User Name Only when DynDNS is selected	Enter the username that you registered with DynDNS. You may enter up to 64 alphanumerical characters and symbols.
Password Only when DynDNS is selected	Enter your DynDNS password. You may enter up to 64 alphanumerical characters and symbols.
Hostname Only when DynDNS is selected	Enter your DynDNS hostname. Hostnames may include up to 255 alphanumerical characters, hyphens, and periods.
Email Address Only when selecting TZO	Enter the email address that you registered with TZO. You may enter up to 64 alphanumerical characters and symbols.
TZO Key Only when selecting TZO	Enter your TZO key. TZO keys may have up to 64 alphanumerical characters and symbols.
Domain Name Only when selecting TZO	Enter your TZO domain name. You may enter up to 255 alphanumerical characters, hyphens, and periods.

Parameter	Meaning
IP Address Update Period	Specifies the period to notify the dynamic DNS service provider of the current IP address. When DynDNS is selected, set it between 0 and 35 days. When TZO is selected, set it between 0 and 99 days. If 0 (zero) is set, no periodic update is performed.
Internet Side IP Address	The WAN-side IP address of the AirStation's Internet port. This address is sent to the dynamic DNS service provider.
Domain Name	The domain name assigned by the dynamic DNS Service provider. The AirStation can be accessed from the Internet using this domain name.
Status	Displays the current status of the dynamic DNS service.

LAN

Configure the LAN side port and DHCP server settings.

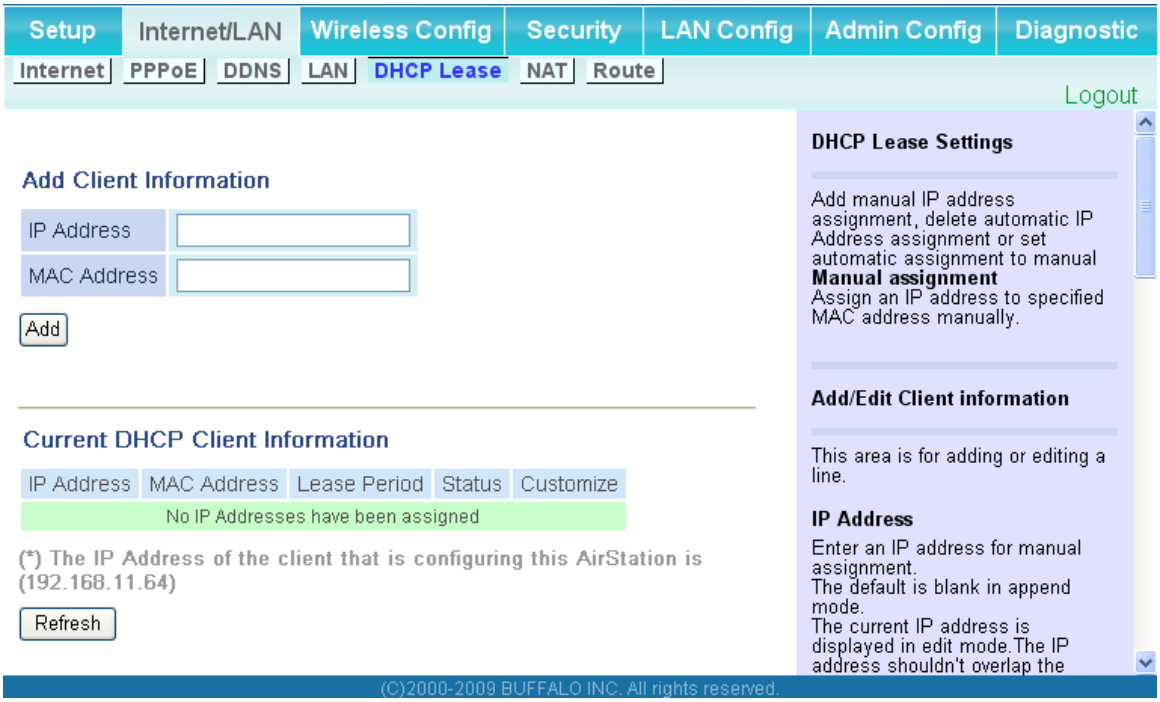


Parameter	Meaning
LAN Side IP Address	Set a LAN side IP address and subnet mask.
DHCP Server Function Router Mode only	Enable or disable the DHCP server, which assigns IP addresses automatically.
DHCP IP Address Pool Router Mode only	Configure the range of IP addresses to be assigned by the DHCP server and IP addresses to be excluded from that range. Values from 0-253 may be entered.
Advanced Settings Router Mode only	Select Display to display the advanced settings options for the DHCP server.
Lease Period Router Mode only	Set the effective period of an IP address assigned by the DHCP server. Up to 999 hours may be entered.
Default Gateway Router Mode only	Set the default gateway IP address for the DHCP server to issue to clients.

Parameter	Meaning
DNS Servers Router Mode only	Set the DNS server IP address for the DHCP server to issue to clients.
WINS Server Router Mode only	Set the WINS server IP address for the DHCP server to issue to clients.
Domain Name Router Mode only	Set the domain name for the DHCP server to issue to clients. You may enter up to 127 alphanumerical characters, hyphens, and periods.
Default Gateway Bridge Mode only	Set the default gateway IP address.
DNS Server Address Bridge Mode only	Set the DNS server IP address.

DHCP Lease (Router Mode only)

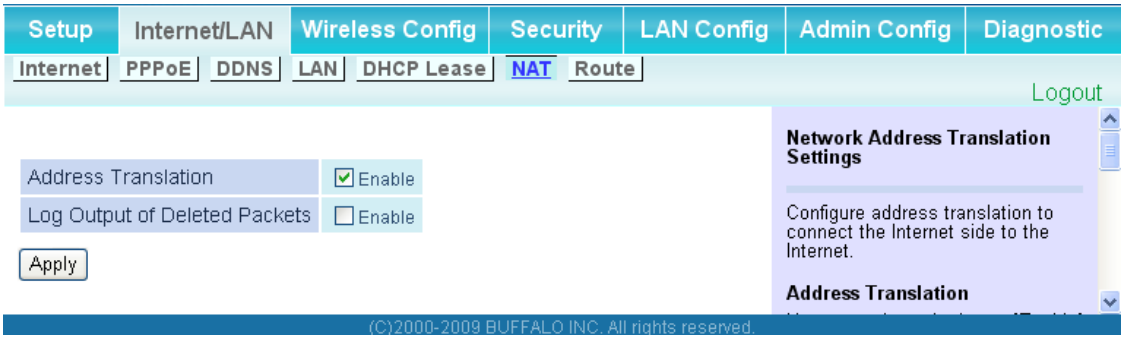
Configure DHCP leasing here.



Parameter	Meaning
IP Address	Enter an IP address to lease manually. The IP address should be from the same subnet as the DHCP scope, but not be within the range that DHCP is assigning to other devices.
MAC Address	Enter the MAC address which identifies the client.
Current DHCP Client Information	Displays information for current leases. An IP address which is leased automatically can be changed to be leased manually by clicking [Manual Assignment].

NAT (Router Mode only)

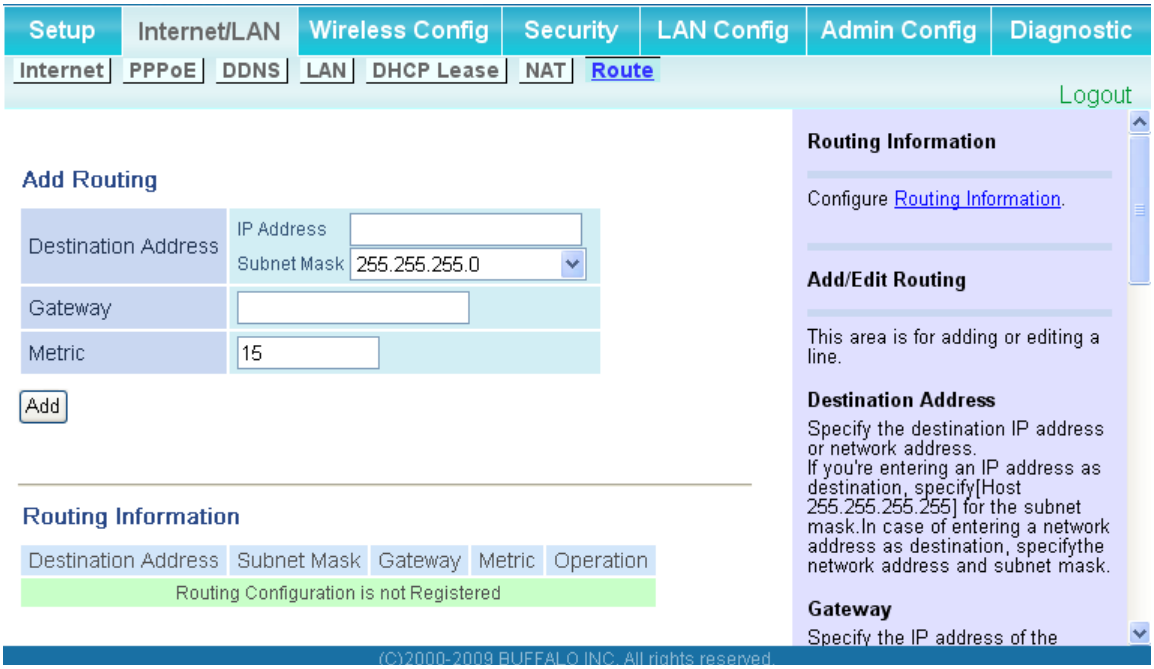
Configure NAT (network address translation) settings here. NAT is used to connect devices on the LAN side to the Internet.



Parameter	Meaning
Address Translation	Enable to use Network Address Translation.
Log Output of Deleted Packets	Enable logging for deleted packets (such as errors) during address translation.

Route

Add routes to the NAT table.

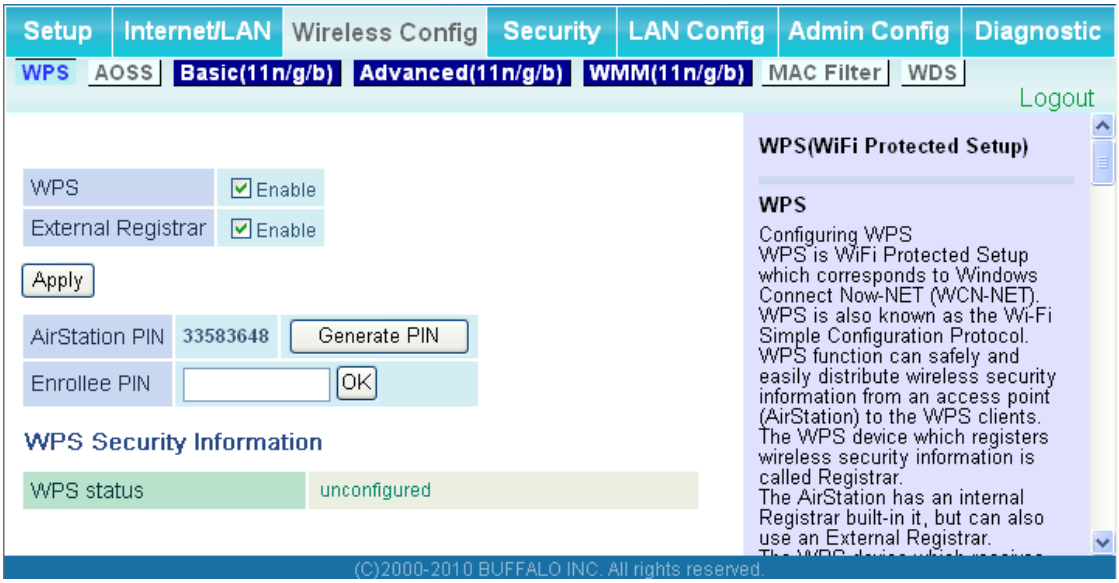


Parameter	Meaning
Destination Address	Adds a destination IP address to an entry in the routing table.
Subnet Mask	Adds a subnet mask to an entry in the routing table.
Gateway	Adds a gateway address to an entry in the routing table.
Metric	The metric is the maximum number of router hops a packet may take on the way to its destination address. Values between 1 and 15 may be entered. The default value is 15.
Routing Information	Entries will be listed here after being added.

Wireless Config

WPS

Configure WPS settings here.



Parameter	Meaning
WPS	Enable to use WPS automatic configuration.
External Registrar	Enable to accept configuration requests from other WPS devices. Note: Configuration requests will be ignored if AOSS is in use.
AirStation PIN	Displays the AirStation's PIN code. Click [Generate PIN] to generate a new PIN code. This code can be entered into other WPS-compatible wireless devices.
Enrollee PIN	Enter the PIN code for the other wireless device and click [OK].
WPS status	Displays WPS status as "configured" or "unconfigured".

AOSS

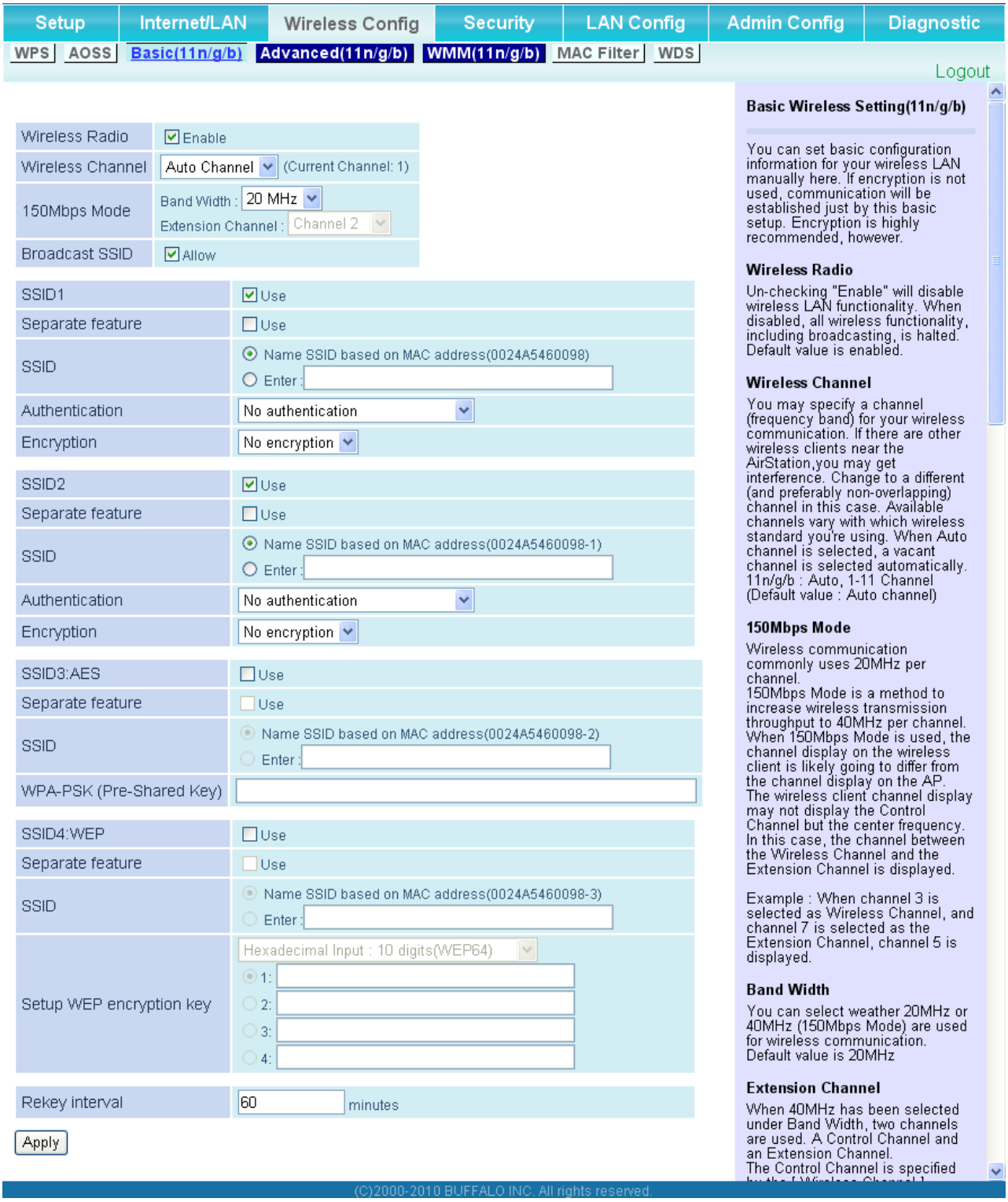
Configure AOSS settings here.

Parameter	Meaning
	Initiates AOSS automatic wireless configuration. Click this, then press or click the AOSS button on your AOSS-compatible wireless client. Repeat for additional AOSS clients.
	Click this button to disconnect AOSS connections. Note : If AOSS connections are disconnected, the SSID and encryption keys will be restored to their most recent settings before using AOSS.

Parameter	Meaning
Exclusive SSID for WEP	You may allow a separate SSID for WEP connections. If this is disabled, clients will not be able to connect with WEP.
Encryption level expansion	Adds additional encryption options including WPA/WPA2-PSK-mixed mode.
Dedicated WEP SSID isolation	Set a separate SSID and network segment specifically for WEP connections. Devices connected with WEP will not be able to communicate with devices connected using AES/TKIP. All connected devices will be able to communicate with the internet.
AOSS Button on the AirStation Unit	If enabled, AOSS will be initiated when the physical AOSS button is pressed. Disable to prevent the button from initiating AOSS.
Current Encryption Information AOSS Connection only	Displays the type of encryption, SSID, and encryption key that AOSS has configured.
[Random]	Click to enter random values for SSID, encryption key, and other settings.
[KEY base] enable for EU/US only	Click to return the SSID, encryption key, and other wireless settings to the values on the case sticker.
[Reset]	Click to return the SSID, encryption key, and other wireless settings to their previous values.
AOSS Client Information AOSS Connection only	Displays status of connected AOSS clients.

Basic

Configure basic wireless settings here.



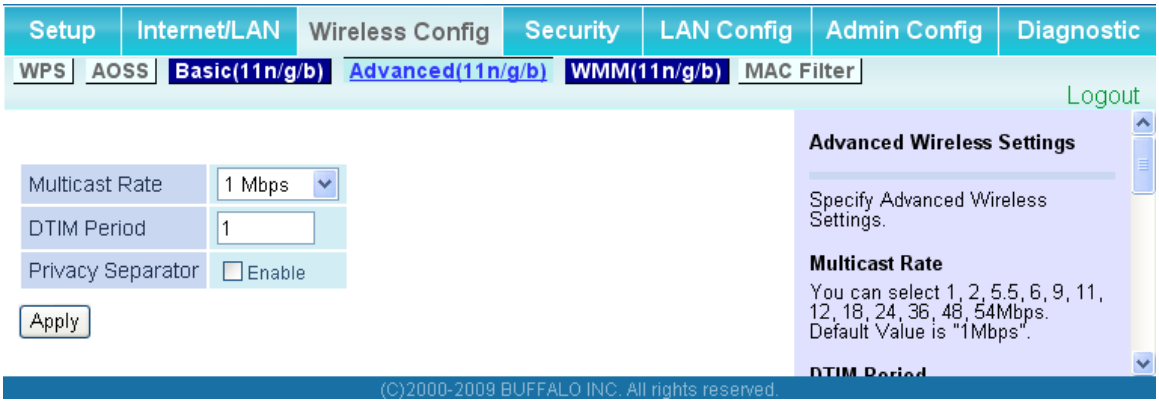
Parameter	Meaning
Wireless Radio	Enable to allow wireless communication. If this is unchecked, then no wireless connections will be allowed.
Wireless Channel	Sets a channel (a range of frequencies) used for wireless connections. Available range of channels is 1-11. With *Auto Channel* selected, the AirStation will automatically use the best available channel. This parameter is disabled if WDS is in use.
150Mbps Mode	150 Mbps mode uses twice the normal frequency range, 40 MHz instead of 20 MHz. In uncongested areas this can increase performance. To use 150 Mbps mode, set the Bandwidth to 40 MHz and choose an Extension Channel. Note: If using Auto Channel for the wireless channel, then the Extension Channel is set automatically. This parameter is disabled if WDS is in use.
Broadcast SSID	If [Allow] is checked, then the AirStation will respond to SSID searches from wireless devices by broadcasting its SSID. If [Allow] is unchecked, then the AirStation ignore SSID searches from wireless devices.
SSID1	Always enabled and supports all wireless encryption types. Encryption can be disabled.
SSID2	Always enabled and supports all wireless encryption types. Encryption can be disabled.
SSID3	SSID3 can use WPA-PSK-AES encryption.
SSID4	SSID4 can use WEP encryption.
Separation	When enabled, wireless devices connected to the AirStation can communicate only with the Internet, not with each other. This parameter does not function if WDS is enabled.
SSID	Set SSID using 1-32 alphanumeric character(s).
Authentication	Specify the type of wireless authentication.

Parameter	Meaning
Encryption	Select a type of data encryption for wireless communication from the following options: **No encryption** Data is transmitted without encryption. Avoid this option since any communication may be intercepted. [No encryption] can be selected only when [No authentication] is selected for Wireless authentication. **WEP** WEP is a common encryption method supported by most devices. Use an encryption key to communicate with a wireless device. WEP can only be selected when [No authentication] is selected for Wireless authentication. **TKIP** TKIP is an encryption method which is more secure than WEP, but slower. Use an pre-shared-key to communicate with a wireless device. TKIP can be selected only when WPA-PSK or WPA2-PSK is selected for Wireless authentication. **AES** AES is more secure than TKIP, and faster. Use a pre-shared-key to communicate with a wireless device. AES can be selected only when WPA-PSK or WPA2-PSK is selected for Wireless authentication. **TKIP/AES mixed mode** TKIP/AES mixed mode allows both TKIP and AES authentication and communication. TKIP/AES mixed mode can be selected only when WPA/WPA2 mixed mode - PSK is selected for Wireless authentication.
WPA-PSK (Pre-Shared Key)	Enter a pre-shared key for use with wireless authentication. Keys may be character or hexadecimal. For a character key, use 8 to 63 alphanumeric characters (case-sensitive). For a hexadecimal key, enter 64 digits using 0 to 9 and a to f (not case-sensitive).
Setup WEP encryption key	Enter an encryption key to encrypt wireless data. Keys may be character or hexadecimal. For a character key, use 5 or 13 alphanumeric characters (case-sensitive). For a hexadecimal key, enter 10 or 26 digits using 0 to 9 and a to f (not case-sensitive).

Parameter	Meaning
Rekey interval	Choose an interval from 0 to 1440 minutes for keys to be updated.

Advanced

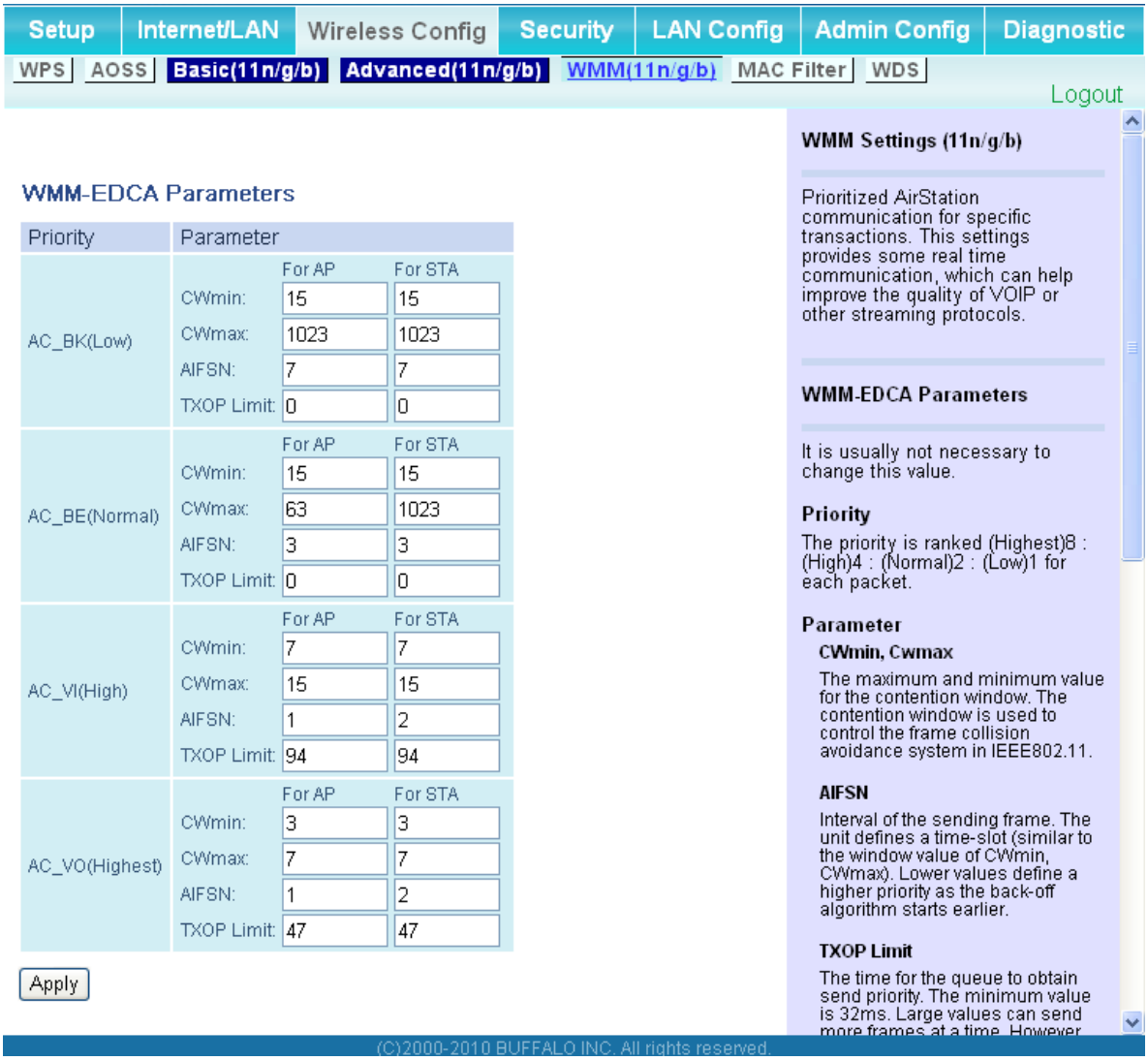
Configure advanced wireless settings on this page. Don't change these settings unless you know what you're doing.



Parameter	Meaning
Multicast Rate	Sets the communication speed of multi-cast packets.
DTIM Period	Set the beacon responding interval (1 -255). This setting is effective only when power management is enabled.
Privacy Separator	If enabled, the Privacy Separator blocks communication between wireless devices connected to the AirStation. Wireless devices will be able to connect to the Internet but not with each other. Devices that are connected to the AirStation with wired connections will still be able to connect to wireless devices normally.

WMM

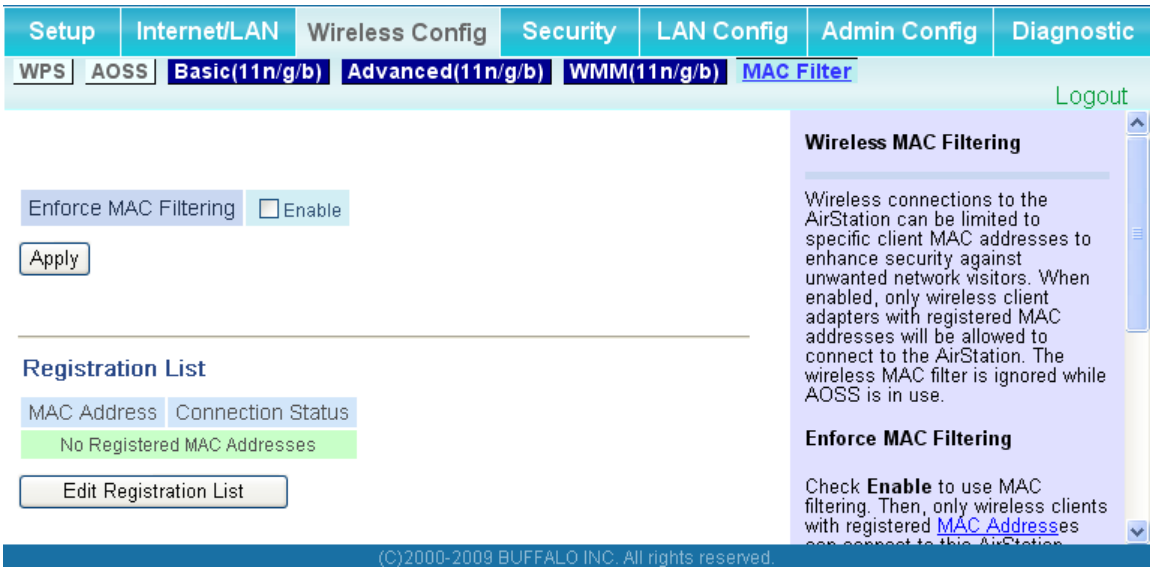
Configure priorities for specific types of data. Don't change these settings unless you know what you're doing.



Parameter	Meaning
WMM-EDCA Parameters	You don't usually need to change these settings. Using the default settings is recommended. **Priority** The following priorities may be applied to individual transmission packets: (Highest) 8, (High) 4, (Normal) 2, and (Low) 1. From the queue, these packets are processed in order of priority. **CWmin, CWmax** The maximum and minimum value of the contention window. The contention window is used in the frame collision avoidance structure performed in IEEE802.11, and generally the smaller the value in the window, the higher the probability that the queue obtains the right to send. **AIFSN** The interval to send frames. The unit of the AIFSN is a slot, just as the window defined by CWmin and CWmax is. The smaller the interval of sending frames, the faster the algorithm can restart. As a result, the priority of the queue is higher. **TXOP Limit** The period of time that the queue can use after obtaining the right to send. The unit is 32 ms. The longer this time, the more frames can be sent per right to send. However, the queue may interfere with other packet transmissions. If TXOP Limit is set to 0 (zero), only one frame can be sent per right to send.

MAC Filter

MAC filtering allows only devices with registered MAC addresses to connect to the AirStation wirelessly.

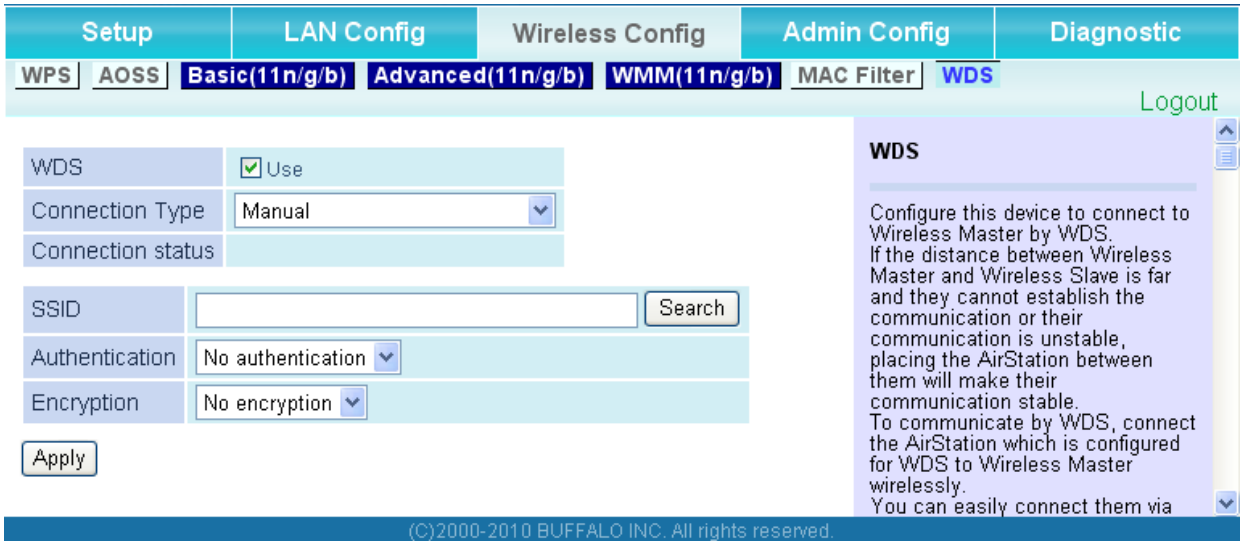


Parameter	Meaning
Enforce MAC Filtering	Enable to restrict wireless connections to devices with registered MAC addresses.
Registration List	Displays the MAC addresses of registered devices which are permitted to connect wirelessly.
[Edit Registration List]	Click this button to add a MAC address of a wireless device to the list of permitted devices.
MAC Addresses to be Registered	Enter a MAC address of a wireless device you permit to connect to the AirStation. Click [Register] to add that MAC address to the list.
List of all clients that are associated with this AirStation	Display the list of all MAC addresses of wireless devices connected to the AirStation.

WDS (Bridge Mode only)

Configure the settings for WDS bridging here. Refer to page 19 for the WDS setup process.

Note: You cannot specify WDS while the device is in the router mode.
Change the mode to bridge on TOP screen to display WDS configuration screen.



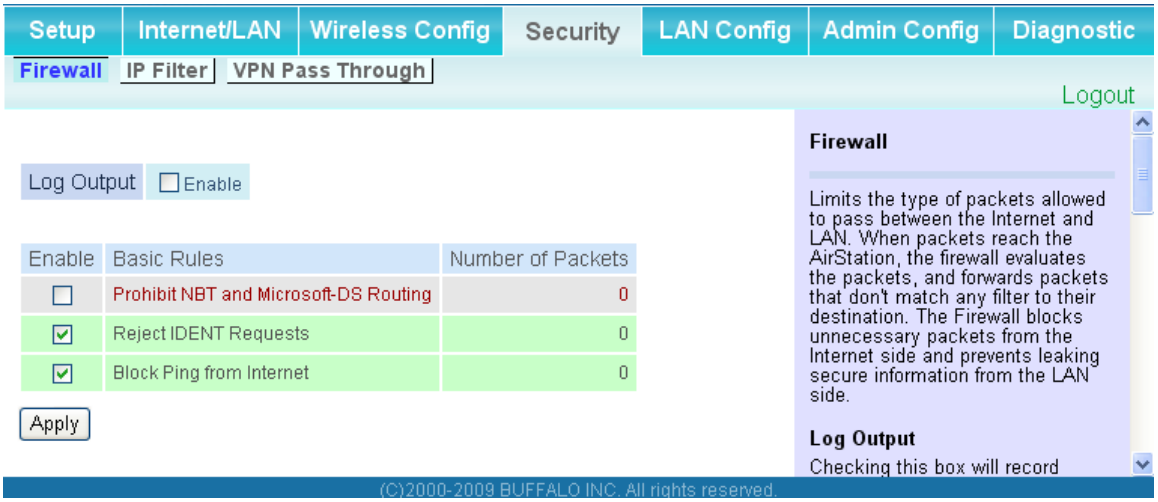
Parameter	Meaning
WDS	Enable to use WDS.
Connection type	Select how you want to configure WDS. **Manual** Enter the target wireless AP's SSID and security information manually. **AOSS** Connect with the AirStation using AOSS. If this option is selected, a special AOSS button will appear. This button can be used for WDS connection only. Once AOSS connection is set up, the WCR-GN will have the same security setting as the other AP in the bridge. Refer to page 19 for setup directions.

Parameter	Meaning
Connection Status	Displays WDS connection status.
SSID	Enter the target Airstation's SSID.
[Search]	Click this button to search for target AirStations by SSID.
Authentication	Enter the target AirStation's wireless authentication method.
Encryption	Enter the target AirStation's encryption type.
WPA-PSK (Pre-shared key)	Enter the target AP's Encryption key (if used).
WEP encryption key setting	Enter the target AP's WEP key (if used).

Security (Router Mode only)

Firewall (Router Mode only)

Configure the AirStation's firewall here.

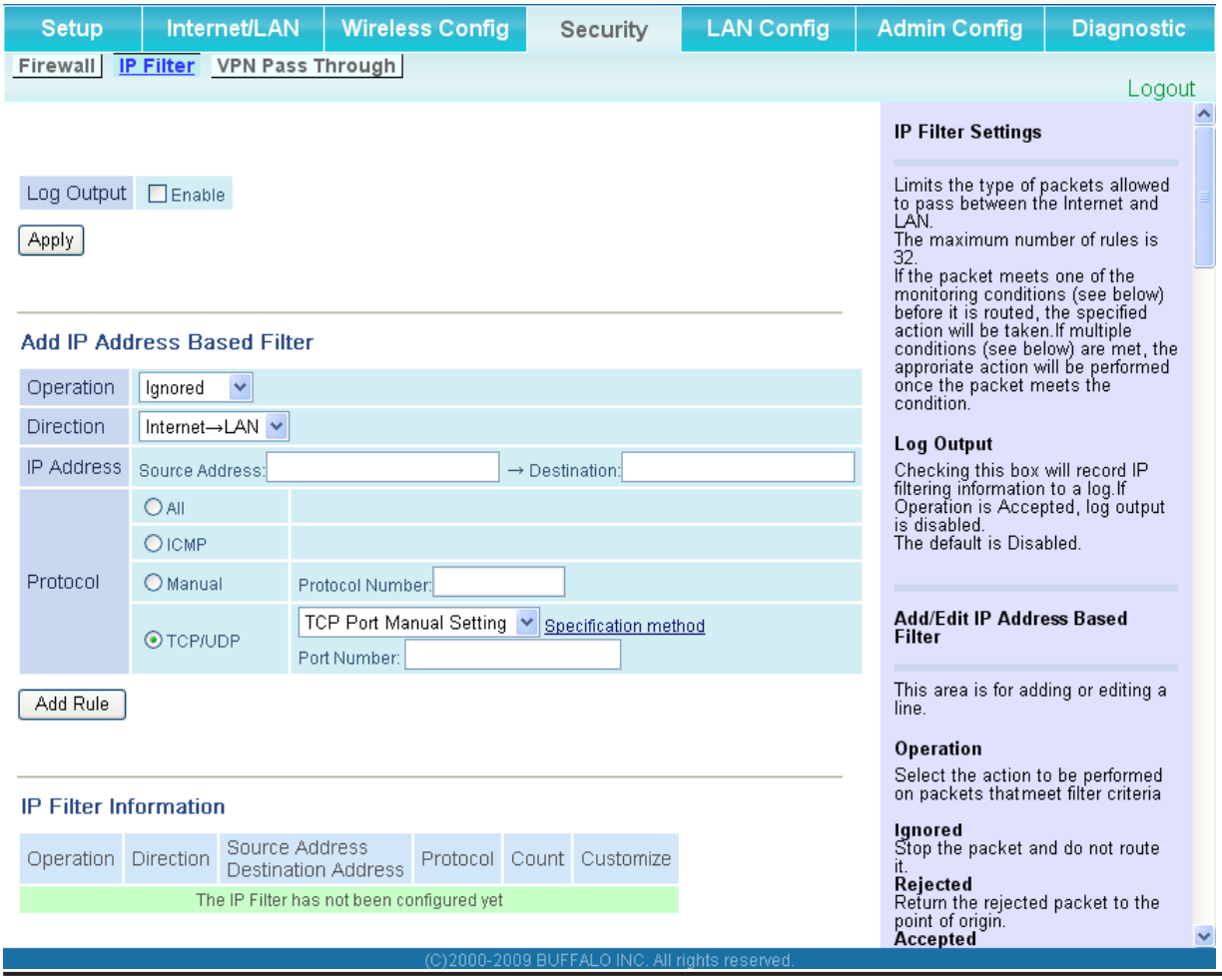


Parameter	Meaning
Log Output	Enable to output a log of firewall activity.
Basic Rules	Enable to use any of the quick filters. Preconfigured quick filters include: **Prohibit NBT and Microsoft-DS Routing** When this is enabled, Microsoft file and printer sharing is blocked between the WAN and LAN sides of the router. You can configure this with PPPoE if you select [Use PPPoE Client] or [Use IP Unnumbered] in Method of Acquiring IP address (on page 31), or if Easy Setup identified a PPPoE connection during setup.

Parameter	Meaning
	Reject IDENT Requests Enabling this option will answer IDENT requests from the Internet side with corresponding rejection packets. Enable this option if you experienced slower transfer speed for network application such as sending mail, using ftp or displaying on browser. If you have configured transfer of IDENT requests to the LAN side computer in the address translation settings (DMZ or TCP port:113), that setting has higher priority, and overrides this setting. **Block Ping from Internet** If this is enabled, the AirStation will not respond to pings from the Internet side. You can configure this with PPPoE if you select [Use PPPoE Client] in Method of Acquiring IP address (page 31), or if Easy Setup identified a PPPoE connection during setup.

IP Filter (Router Mode only)

Edit IP filters here.



Parameter	Meaning
Log Output	If enabled, IP filter activity is saved to a log.
Operation	Specify how to process target packets.
Direction	Specify the transmission direction of target packets.
IP Address	Specify the sender's IP address and receiver's IP address of the target packets.
Protocol	Select a protocol for target transmission packet.
IP Filter Information	Display the list of IP filters which have been registered.

VPN Pass-Through (Router Mode only)

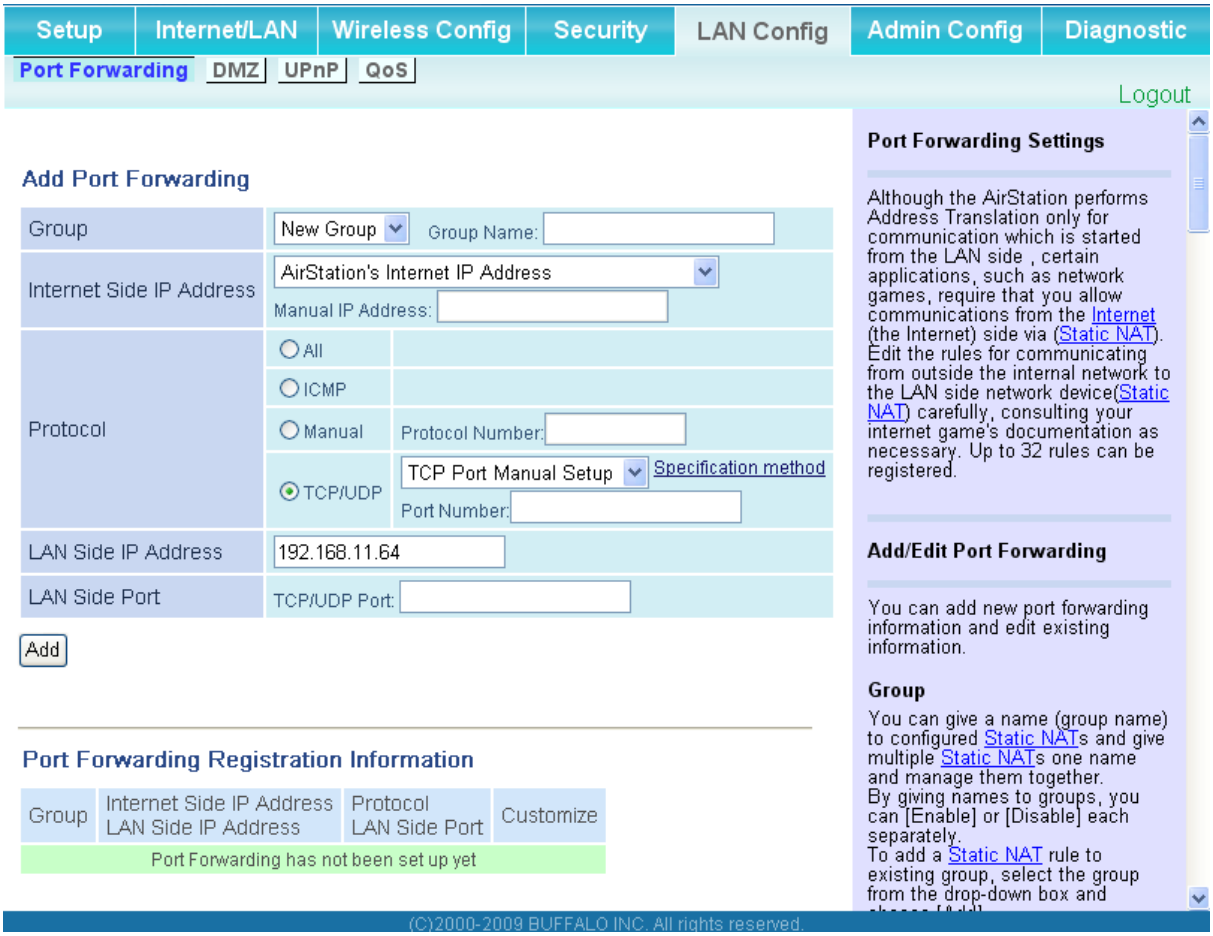
Configure IPv6 pass-through, PPPoE pass-through, and PPTP pass-through here.

Parameter	Meaning
IPv6 Pass-through	Enable to use IPv6 pass-through for address translation.
PPPoE Pass-through	Enable to use PPPoE bridge. Using PPPoE bridge lets you automatically obtain LAN-side IP addresses from your provider using the PPPoE protocol because all PPPoE packets can pass through from the LAN to the WAN side.
PPTP Pass-through	Enable to use the PPTP pass-through for address translation.

LAN Config (Router Mode only)

Port Forwarding (Router Mode only)

Configure port translation here.



Parameter	Meaning
Group	Specify a group name for a new rule to belong to. Select [New Group] and enter the new group name in the *Group Name* field to create a new group. A group name can include up to 16 alphanumeric letters.
Internet Side IP Address	Enter the Internet side IP address (before translation) for the port translation table entry.
Protocol	Select the Internet side protocol (before translation) for the port translation table entry.

Parameter	Meaning
LAN Side IP Address	Enter the LAN side IP address (after translation) for the port translation table entry.
LAN Side Port	Select the LAN side (after translation) port number (1 - 65535) for the port translation table entry.
Port Forwarding Registration Information	Shows current entries in the port translation table.

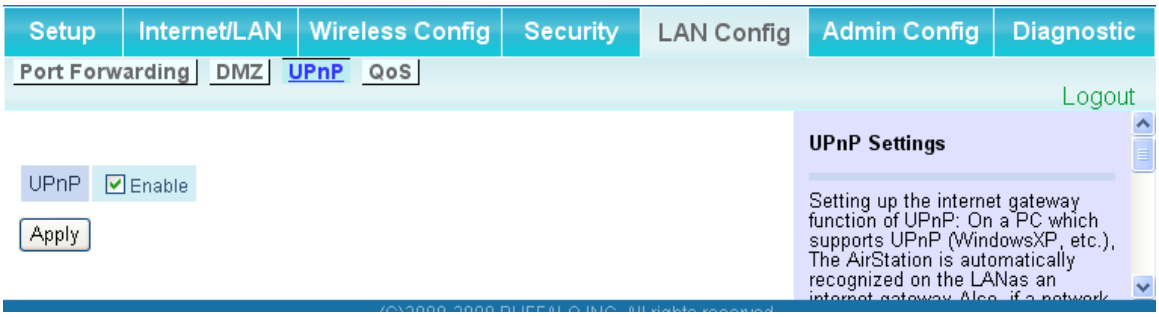
DMZ (Router Mode only)

Configure a destination to transfer communication packets without a LAN side destination to.

Parameter	Meaning
IP Address of DMZ	Enter the IP address of the destination to which packets which are not routed by a port translation table are forwarded. Note: RIP protocol packets (UDP port number 520) will not be forwarded.

UPnP (Router Mode only)

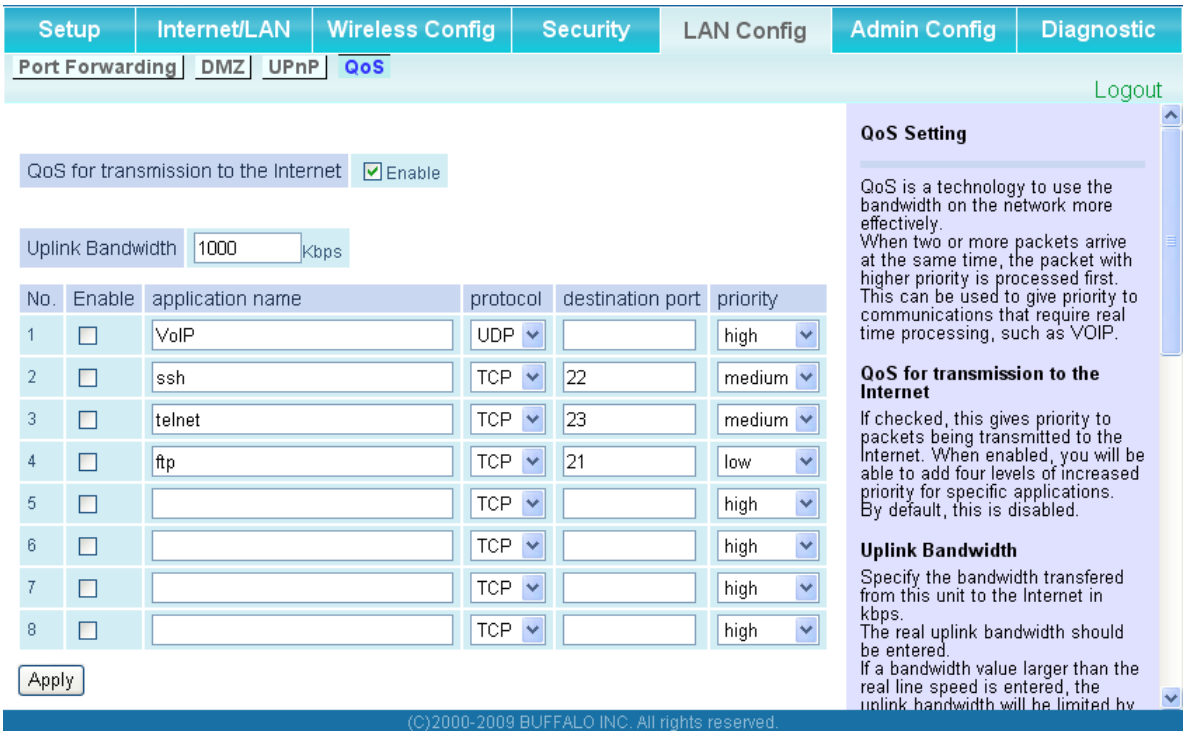
Enable UPnP (Universal Plug and Play) here.



Parameter	Meaning
UPnP	Enable or disable Universal Plug and Play (UPnP) functionality.

QoS (Router Mode only)

Configure priorities for types of packets passing through the router.



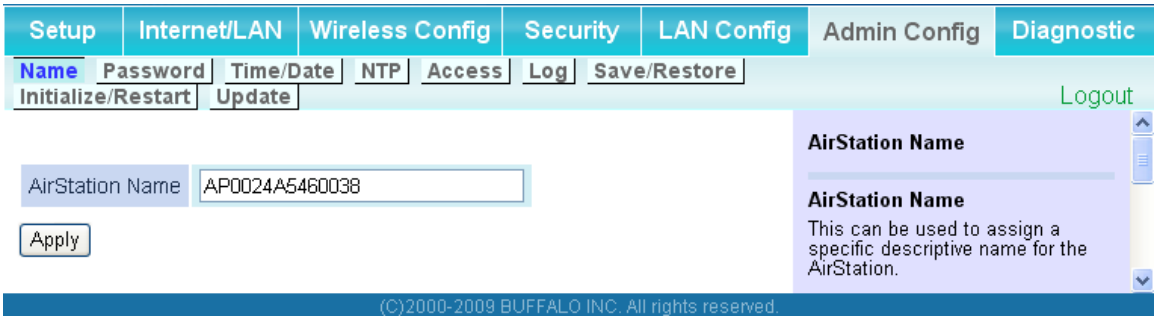
Parameter	Meaning
QoS for transmission to the Internet	Determine whether or not to prioritize packets by application. Check this box to enable QoS.
Upload bandwidth	Specify the upstream bandwidth in kbps from the AirStation to the internet side.
Enable	Enable or disable this entry.
application name	Enter an application name. Names may use up to 32 alphanumeric characters, double or single tickmarks ('"), quotation marks (“), and semicolons (;).
protocol	Select either TCP or UDP.

Parameter	Meaning
destination port	Specify a destination port with the value of 1 - 65535. If this field is empty, a random port is selected.
priority	Select high, medium, or low priority for these packets. * Packets whose type isn't on the list are treated as a level between medium and low.

Admin Config

Name

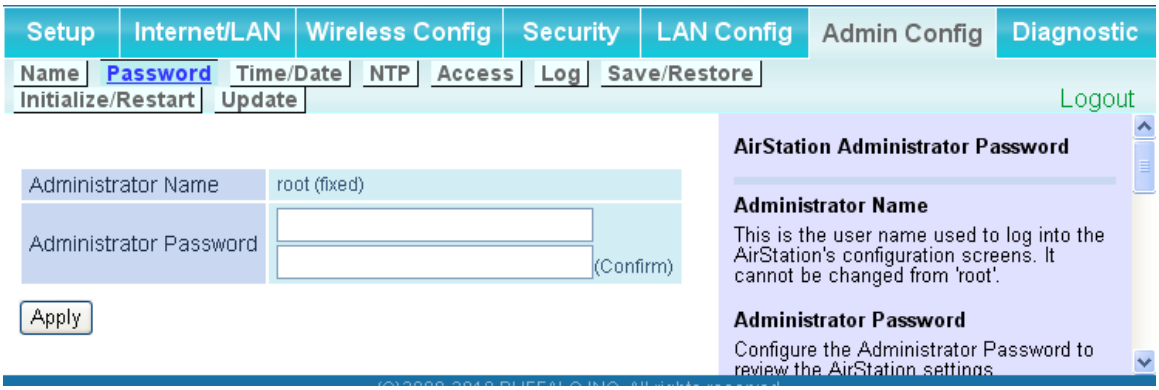
Configure the AirStation's name.



Parameter	Meaning
AirStation Name	Enter a name for the AirStation. Names may include up to 64 alphanumeric characters and hyphens (-).

Password

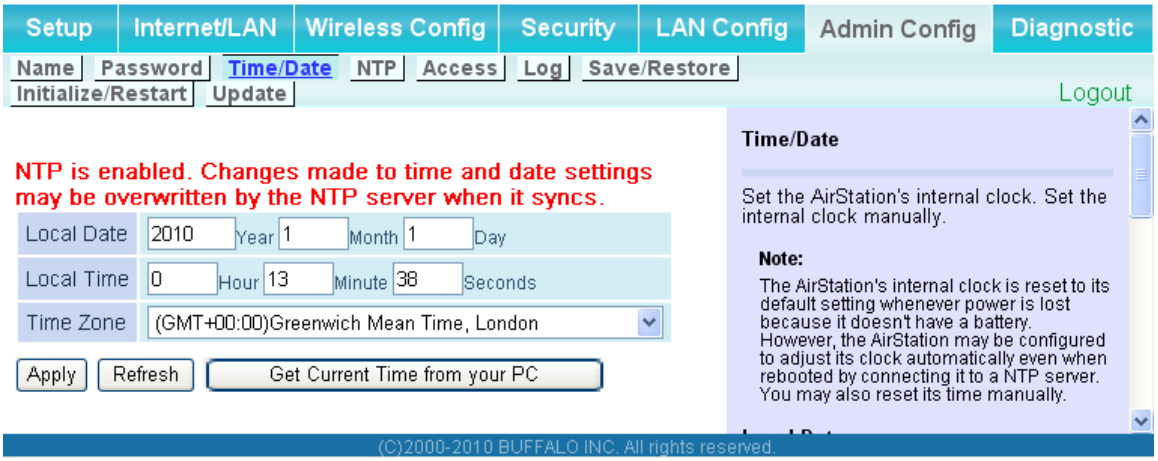
You may change the login password for the configuration interface here.



Parameter	Meaning
Administrator Name	The username for login is fixed as "root".
Administrator Password	This password is to log in to the AirStation's configuration interface. It may contain up to 8 alphanumeric characters and underscores (_).

Time/Date

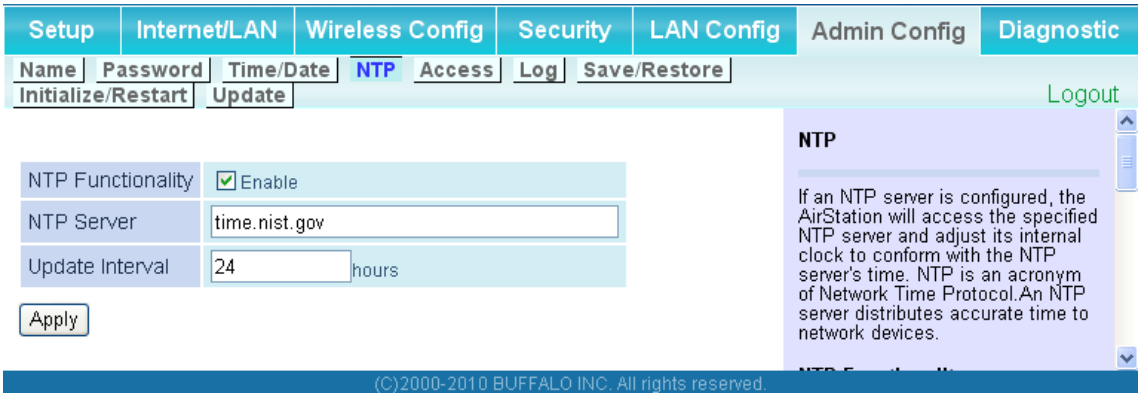
Configure the AirStation's internal clock here.



Parameter	Meaning
Local Date	You may manually set the date of the AirStation's internal clock.
Local Time	You may manually set the time of the AirStation's internal clock.
Time Zone	Specify the time zone (offset of Greenwich Mean Time) of the AirStation's internal clock.

NTP

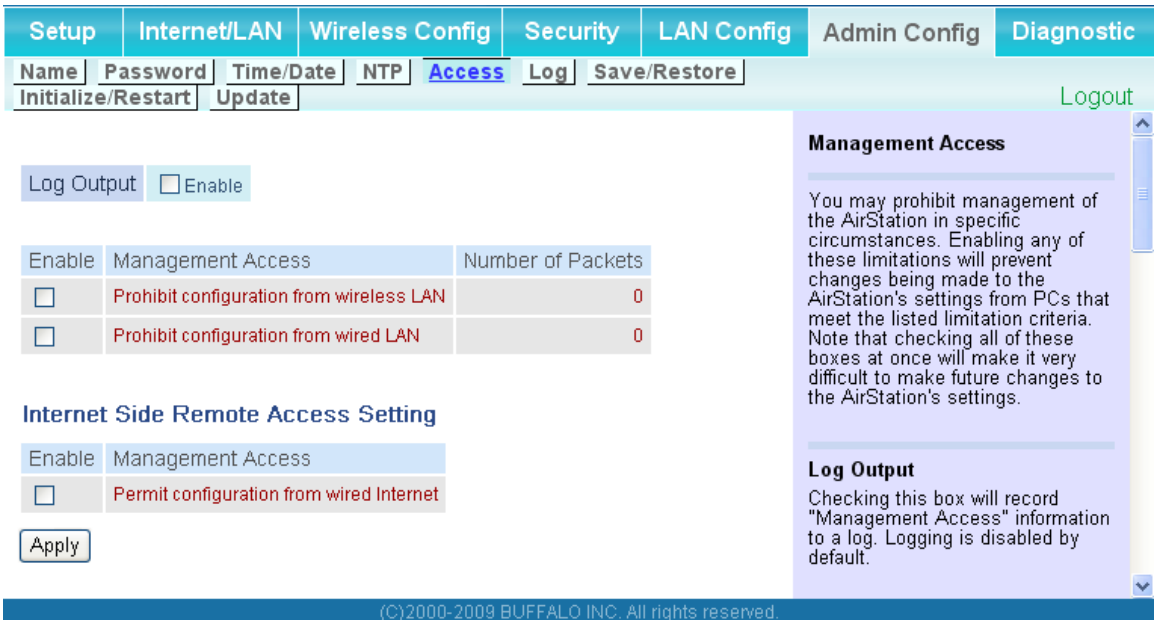
You may configure an NTP server to automatically correct the AirStation's time settings.



Parameter	Meaning
NTP Functionality	Enable to use an NTP server to automatically set the AirStation's internal clock.
NTP Server	Enter the name of the NTP server as a host name, host name with domain name, or IP address. Up to 255 alphanumeric characters, hyphens (-), and underscores (_) may be used.
Update Interval	How often should the AirStation submit a time request to the NTP server? Intervals of 1 - 24 hours may be set.

Access

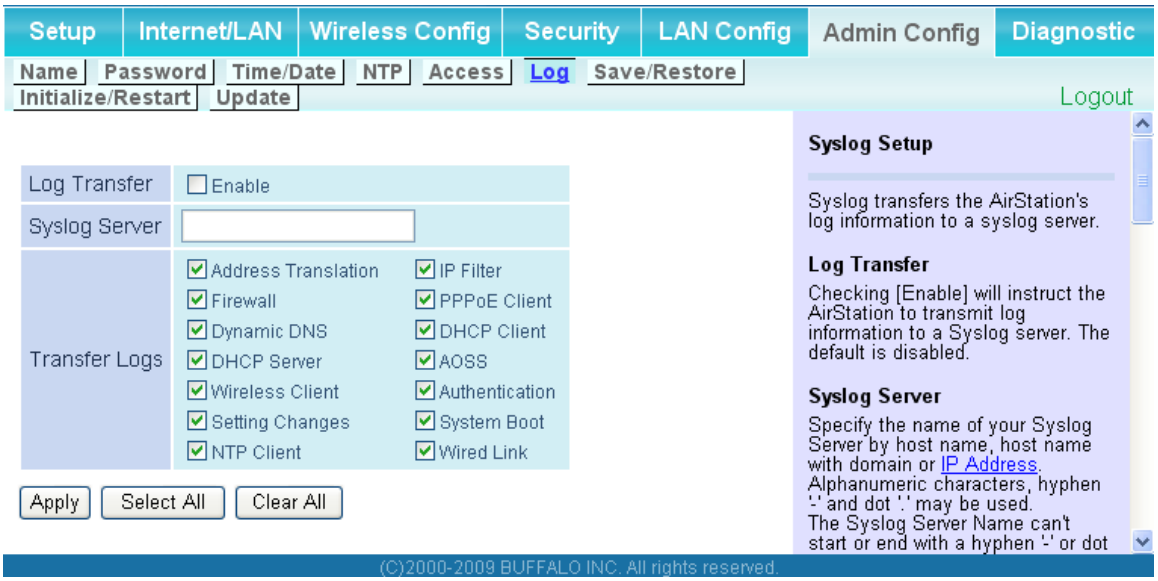
The screen to restrict access to the AirStation's settings screens.



Parameter	Meaning
Log Output	Enabling outputs a log of changes to access settings.
Prohibit configuration from wireless LAN	If enabled, prevents access to settings screens from wirelessly connected devices (only wired devices may configure).
Prohibit configuration from wired LAN	If enabled, prevents access to settings screens from wired devices (only wirelessly connected devices may configure).
Permit configuration from wired Internet Router mode only	If enabled, allows access to settings screens from network devices on the Internet side.
Permitted IP address Router mode only	Displayed only if Internet side configuration is enabled. Enter the IP address of the device that is permitted to configure the AirStation remotely from the Internet side.
Permitted Port Router mode only	Displayed only if Internet side configuration is enabled. Set a port number (1 - 65535) if configuring the AirStation from the Internet side.

Log

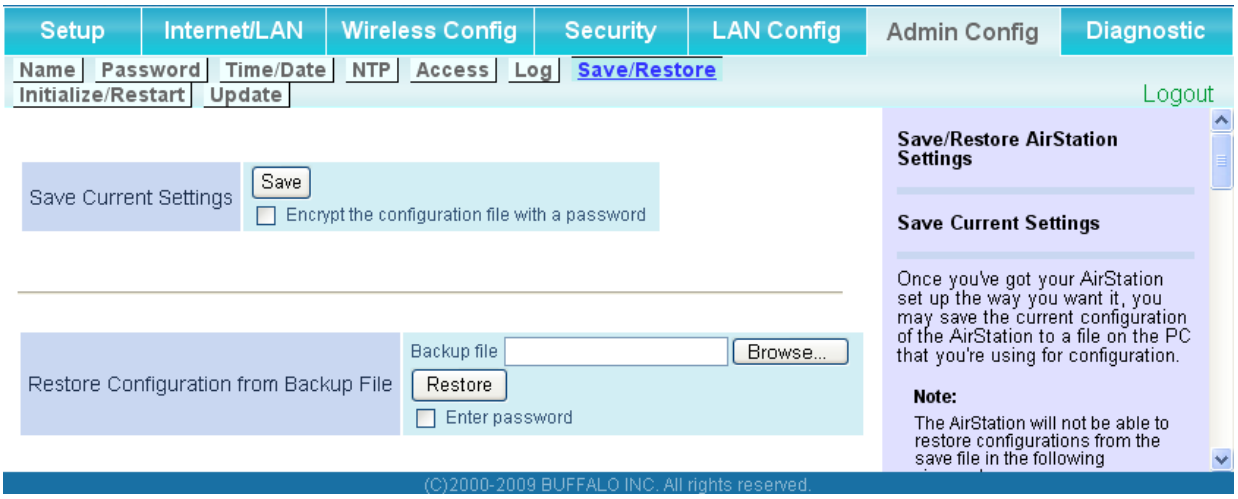
Logs may be transferred to a syslog server automatically.



Parameter	Meaning
Log Transfer	Enable to send logs to a syslog server.
Syslog Server	Identify the syslog server by host name, host name with domain name, or IP address. You may enter up to 255 alphanumeric characters, hyphens (-), and underscores (_).
Transfer Logs	Choose which logs will be transferred to the syslog server.

Save/Restore

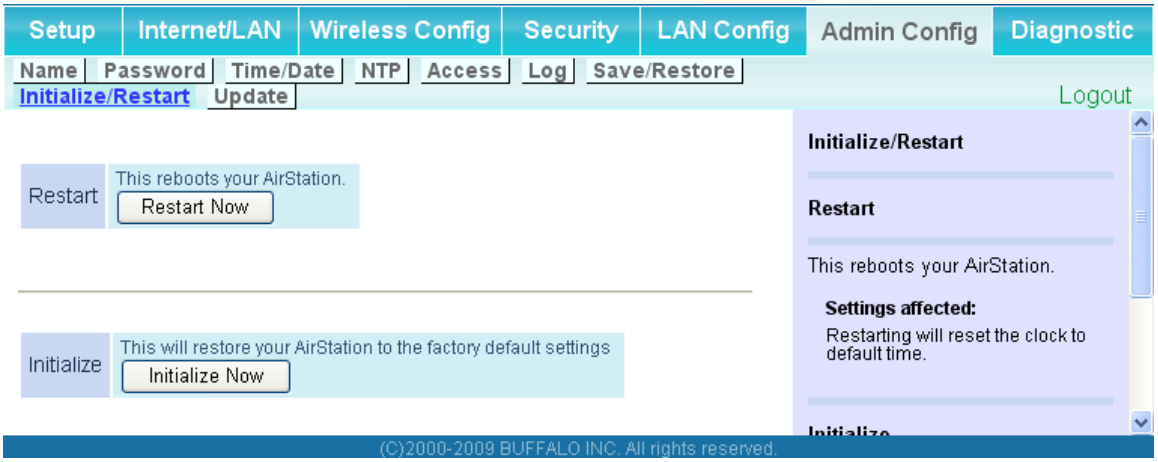
AirStation settings may be saved to a configuration file or restored from one.



Parameter	Meaning
Save current settings	Click [Save] to save the current configuration of the AirStation to a file. If [Encrypt the configuration file with a password] is checked, then the configuration file will be password protected with the specified password.
Restore Configuration from Backup File	Restore the configuration of the AirStation from a saved configuration file by clicking the [Browse] button, navigating to the configuration file, and then clicking Restore. If the configuration file was password protected, then put a check next to [To restore from the file you need the password], enter the password, and click [Open].

Initialize/Restart

Initialize or restart the AirStation from here.



Parameter	Meaning
Restart	Click [Restart Now] to restart the AirStation.
Initialize	Click [Initialize Now] to initialize and restart the AirStation.

Update

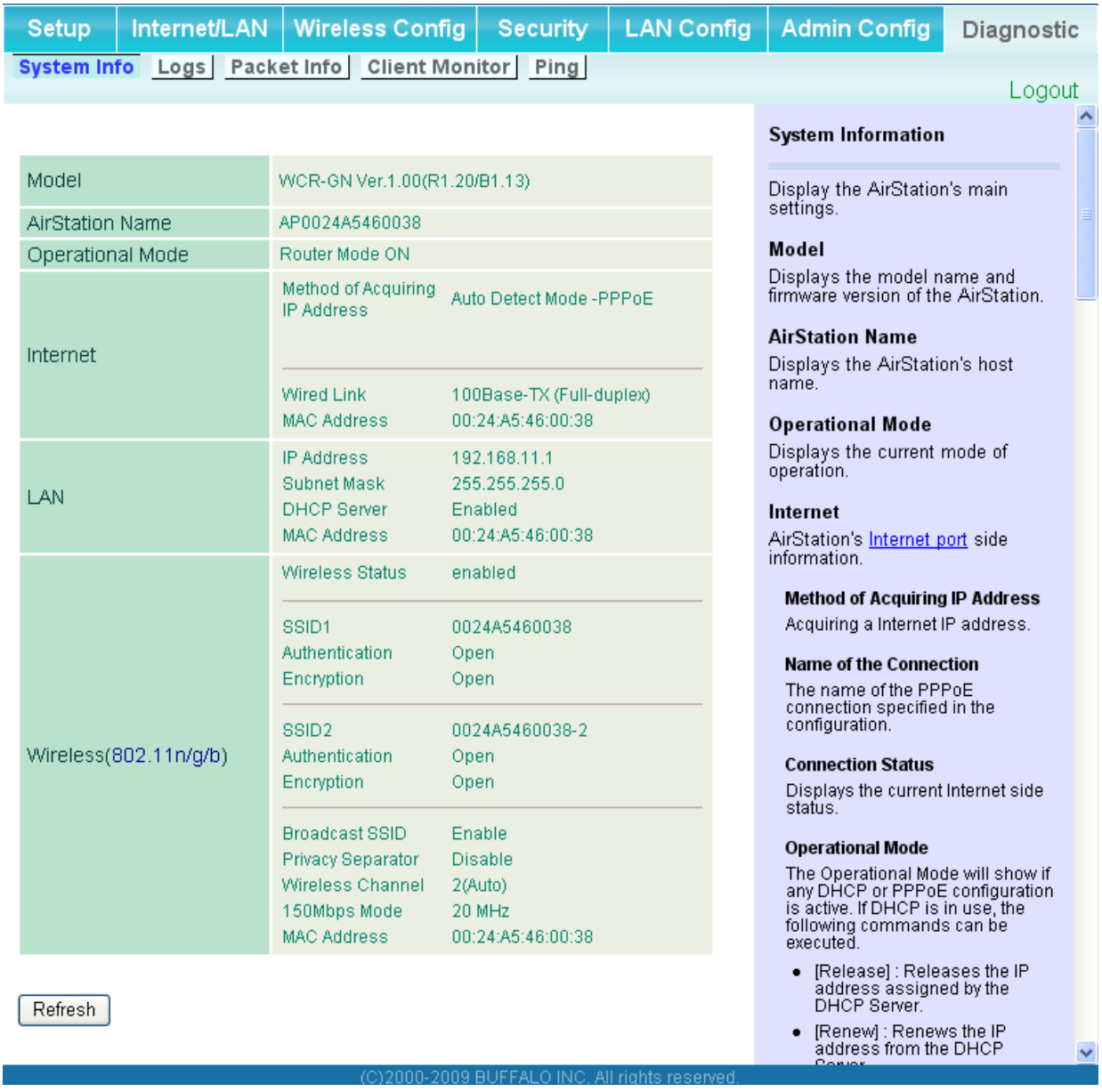
The screen to update the AirStation's firmware.

Parameter	Meaning
Firmware Version	Displays the current firmware version of the AirStation.
Firmware File Name	Click [Browse] to specify a firmware file and click [Update Firmware]. This will update the firmware.

Diagnostic

System Info

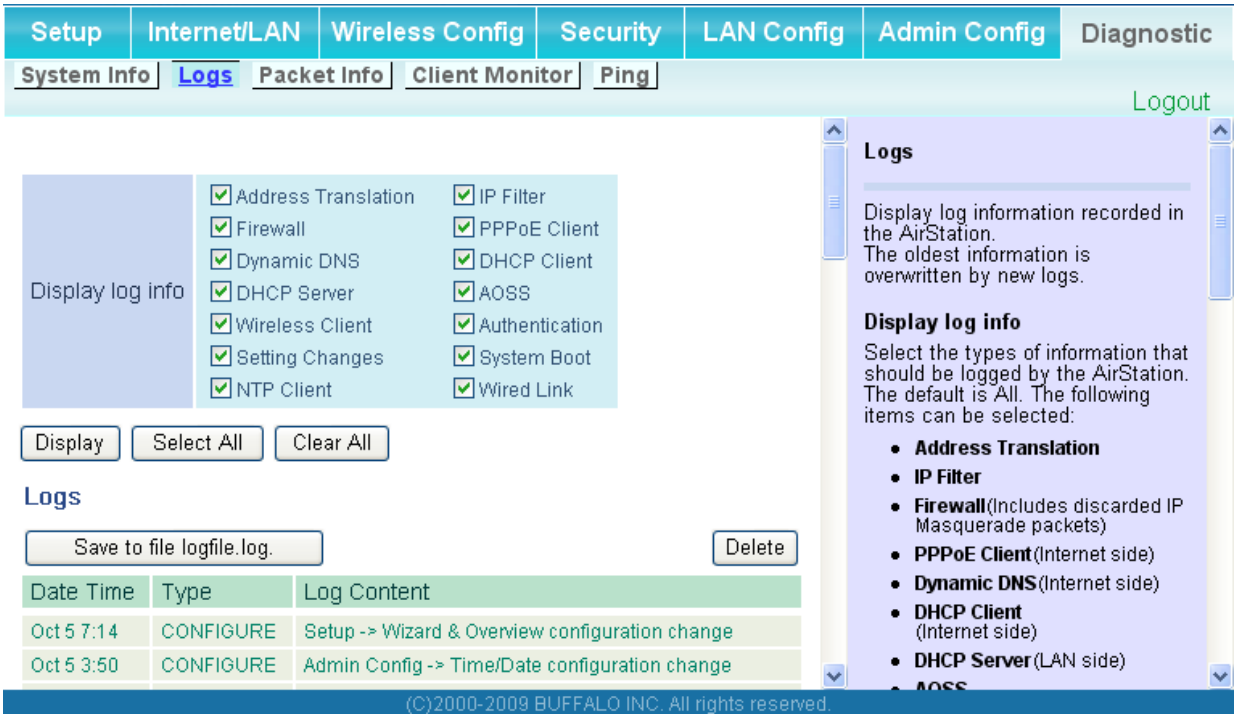
System information for the AirStation is displayed here.



Parameter	Meaning
Model	Displays the product name of the AirStation and the firmware version.
AirStation Name	Displays AirStation Name (as set on page 62).
Operational Mode	Displays the current operational mode of the AirStation.
Internet Router mode only	Displays WAN port information.
LAN	Displays LAN port information.
Wireless	Displays wireless status.
WDS Bridge mode only	Displays the status of WDS.

Logs

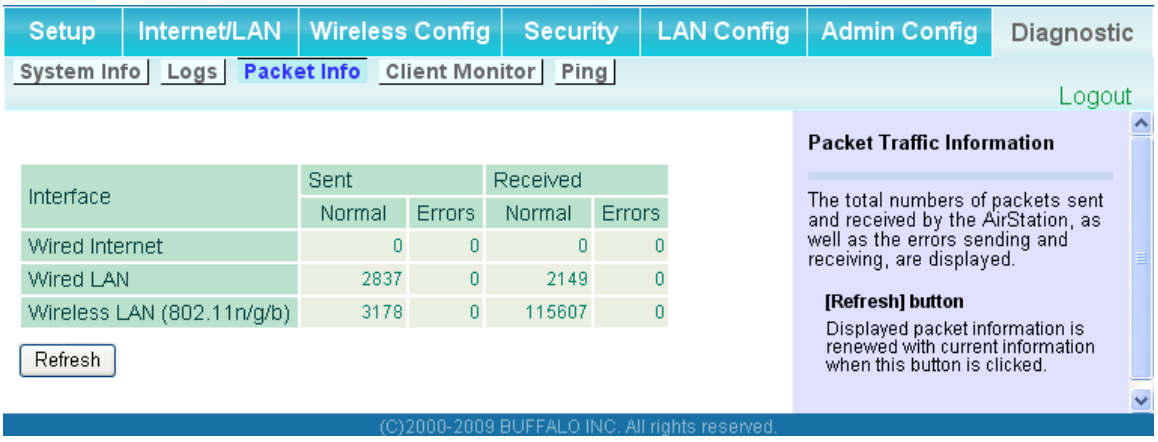
View the AirStation's logs here.



Parameter	Meaning
Display log info	Choose the type of logs to display.
Logs	Displays the selected logs.

Packet Info

This screen shows the packets that the AirStation has transferred.



Parameter	Meaning
Sent	Displays the number of packets sent to the WAN (Internet), the Ethernet LAN, and the wireless LAN.
Received	Displays the number of packets received from the WAN (the Internet), the Ethernet LAN, and the wireless LAN.

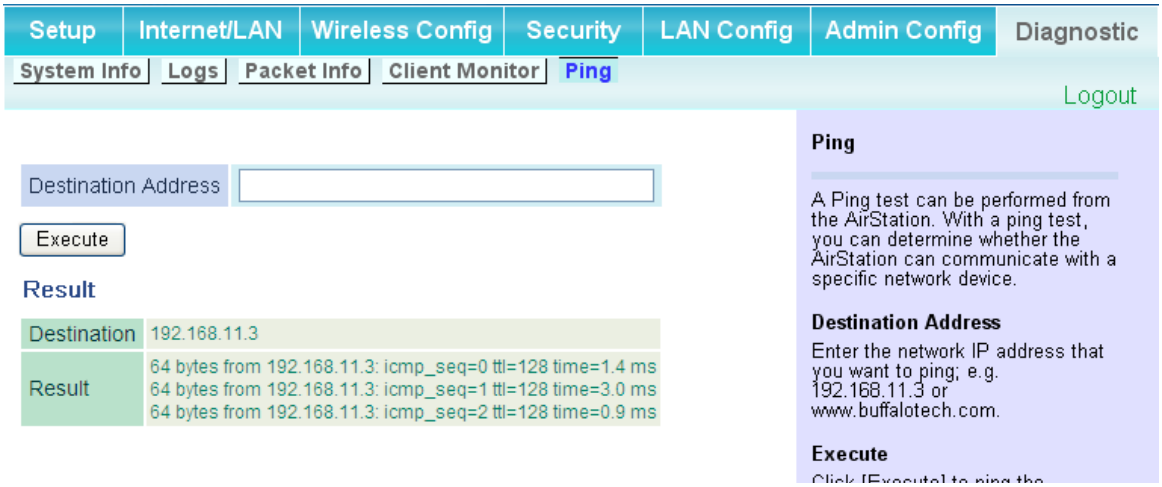
Client Monitor

This screen shows devices that are connected to the AirStation.

Parameter	Meaning
Client Monitor	Displays information (MAC address, lease IP address, host name, communication method, wireless authentication and 802.11n) for devices that are connected to the AirStation.

Ping

A ping test checks whether the AirStation can communicate with a specific network device.



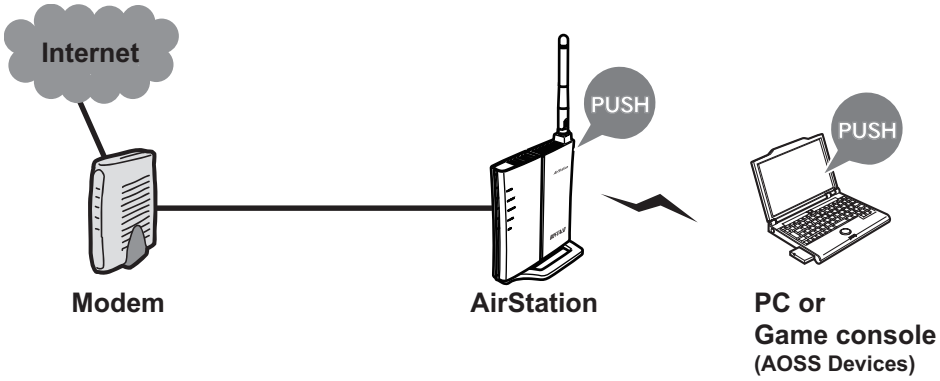
Parameter	Meaning
Destination Address	Enter an IP address or a hostname to ping, and click [Execute]. The result will be displayed in the [Result] field.

Chapter 5 - Connect to a Wireless Network

Automatic Secure Setup (AOSS/WPS)

AOSS and WPS are systems that enable you to automatically configure wireless LAN settings. Just pressing the buttons will connect wireless devices and complete security settings. Use them to automatically connect wireless devices, computers, or game machines which support AOSS or WPS.

AOSS (AirStation One-Touch Secure System) is technology developed by Buffalo Technology. WPS was created by the Wi-Fi Alliance.



- Before using AOSS/WPS to connect to a computer with a Buffalo wireless client, install Client Manager software from the included utility CD on the computer. Consult your wireless client's documentation for more information.
- Buffalo's Client Manager software can be used with the wireless LAN devices built into your computer. However, it is not guaranteed to work with all wireless LAN devices available.

Note:

To configure WDS with AOSS, you must use a different AOSS button. Refer to page 19 for more information on using AOSS to configure a WDS bridge.

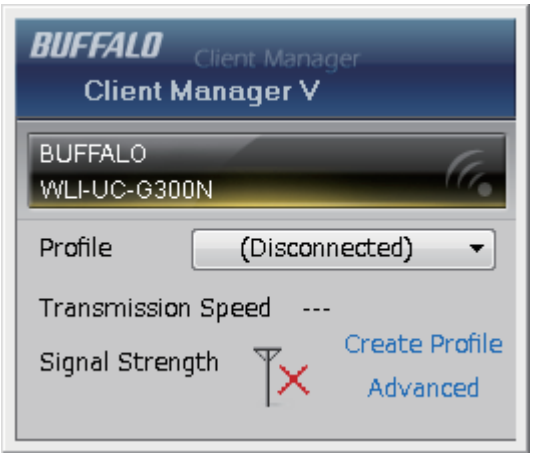
If you use AOSS to configure WDS, any wireless clients that were previously connected to the AirStation via AOSS will have been disconnected. Refer to the following procedure to reconnect them.

Windows 7 or Vista (Client Manager V)

If you are using Windows 7 or Vista, use the included Client Manager V software to connect wirelessly with AOSS/WPS.

1 Click [Start] > [All Programs] > [BUFFALO] > [AirStation Utility] > [Client Manager V].

2



Click [Create Profile].

3 If the User Account Control screen opens, click [Yes] or [Continue].

4

Click the [WPS AOSS] button.

Follow any instructions displayed on the screen. When the Security LED on the front of the AirStation stop flashing and glows steadily, the connection is complete.

Windows XP (Client Manager 3)

If you are using Windows XP, use Client Manager 3 to connect wirelessly with AOSS/WPS.

1 Right click on the icon in the system tray and select [Profile].

2

Click the [WPS AOSS] button.

It will take several seconds for your wireless connection to be configured. When the Security LED on the front of the AirStation stop flashing and glows steadily, the connection is complete.

Mac OS X (AOSS Assistant)

If you are using Mac OS X 10.7 / 10.6 / 10.5 / 10.4, use the included AOSS Assistant software to connect wirelessly with AOSS.

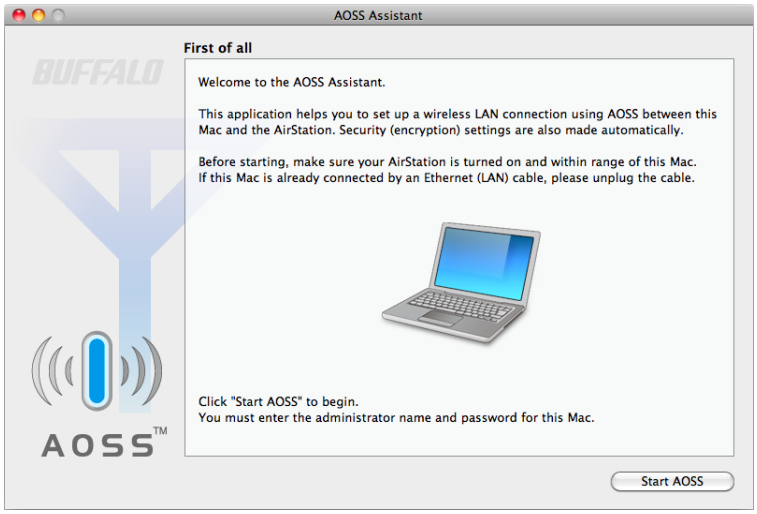
1 Load the utility CD in your Macintosh.

2 From the menu bar, click [Go] > [Computer].

3 Double-click the CD icon, and then double-click [AOSS Assistant] in the "Mac" folder.

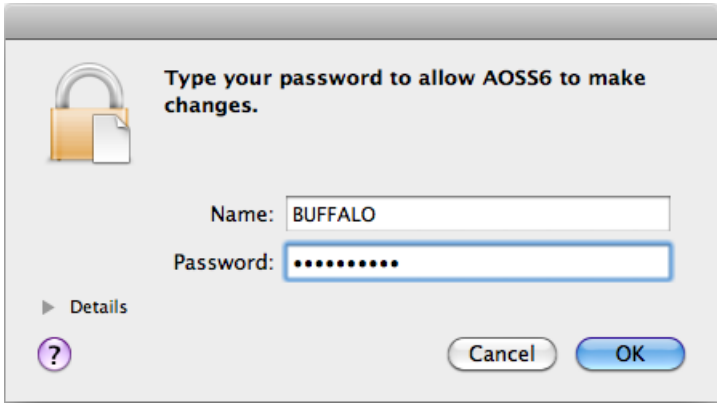
4 The software license screen is displayed. Click [Agree] to proceed.

5



Click [Start AOSS].

6



Enter the Mac's username and password and click [OK].

It will take several seconds for your wireless connection to be configured. When the Security LED on the front of the AirStation stop flashing and glows steadily, the connection is complete.

Other Devices (e.g. Game Console)

If you are using a game machine which supports AOSS or WPS, refer to that device's manual to initiate AOSS/WPS. When instructed, hold down the AOSS button on the AirStation for 1 second.

When the Security LED on the front of the AirStation stop flashing and glows steadily, the connection is complete.

Manual Setup

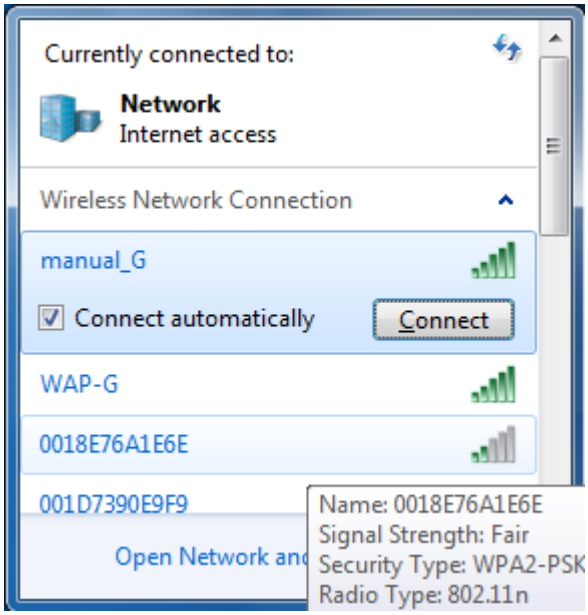
You can also connect to the AirStation without installing Client Manager V or Client Manager 3 by using the utility built-in to Windows. The procedure varies depending on which version of Windows you are using.

Windows 7 (WLAN AutoConfig)

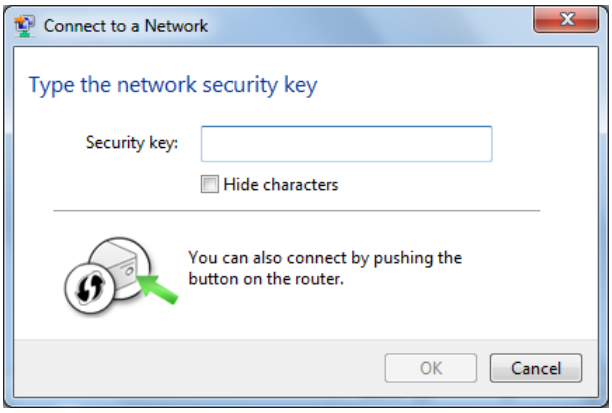
With Windows 7, use WLAN AutoConfig to connect to the AirStation.

1 Click on the network icon in the system tray.

2



Select the target AirStation's name and click [Connect]. If you will be connecting to this device in the future, checking [Connect automatically] is recommended.

3 

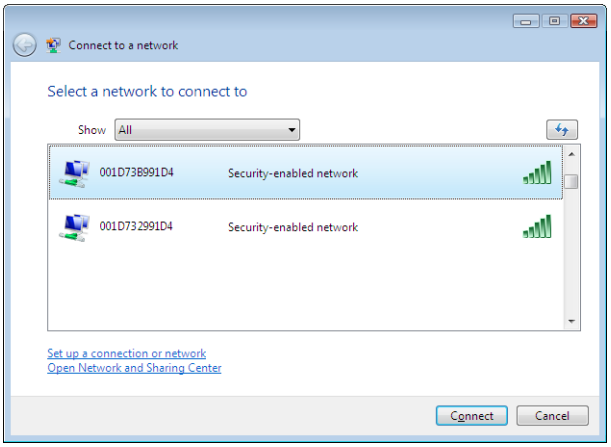
Enter the encryption key and click [OK].

Windows Vista (WLAN AutoConfig)

With Windows Vista, use WLAN AutoConfig to connect to the AirStation.

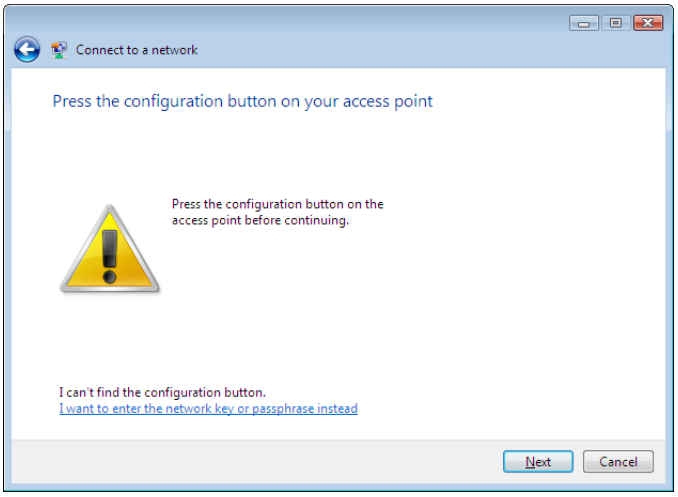
1 Right click on the wireless network icon in the system tray.

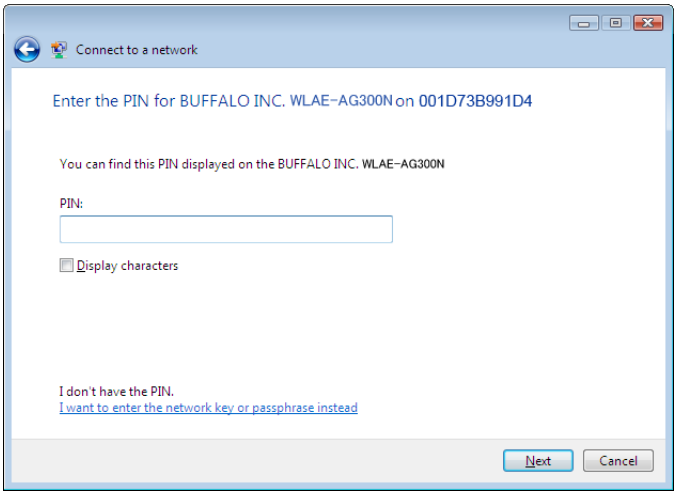
2 Click [Connect to a network].

3 

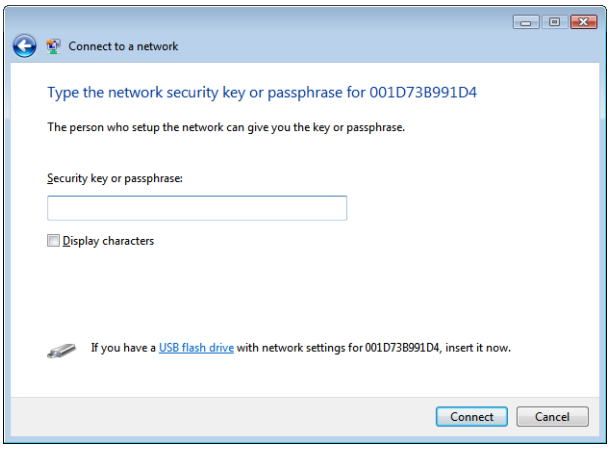
When the screen at left is displayed, select the network to connect to and click [Connect].

If the screen below is displayed, click [I want to enter the network key or passphrase instead]. Otherwise,go to step 4.





4



Enter the encryption key and click [Connect].

Step through the wizard to finish configuration. If the Set Network Location screen is displayed, select [Home], [Work], or [Public location] depending where you're using the AirStation.

Windows XP (Wireless Zero Configuration)

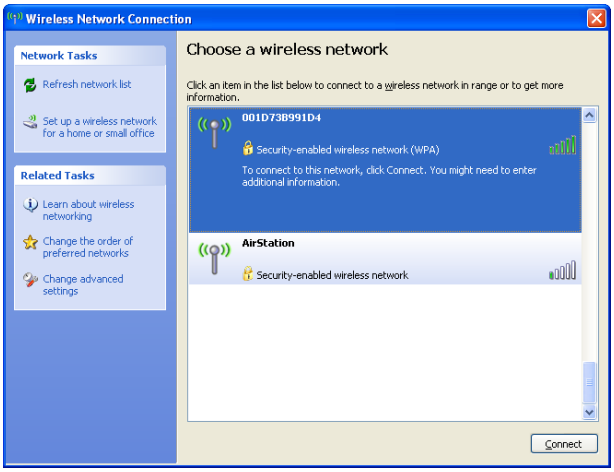
Windows XP includes a built-in utility to connect to your AirStation.

Note: If Client Manager 3 is installed on your computer, Wireless Zero Config is disabled. Uninstall Client Manager 3 to use Wireless Zero Config, or just use Client Manager 3 to connect to the AirStation.

1 Right click on the icon in the system tray.

2 Click [View Available Wireless Networks].

3



Select the network to connect to and click [Connect].

4

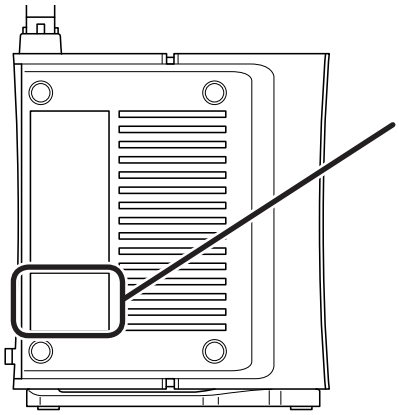
Enter the encryption key (twice) and click [Connect].

Wireless Zero Config will automatically connect you to the network.

Mac OS X (Wi-Fi)

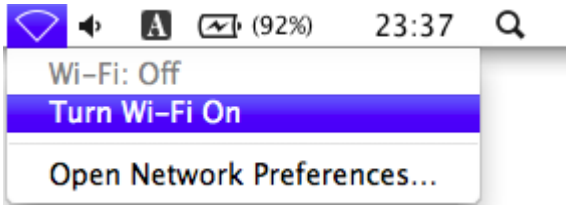
Use Wi-Fi on a Mac to connect to the AirStation.

1



Refer to the label on the side of the AirStation.
Make a note of the SSID and KEY printed on the label.

2



Click the icon in the top section of the screen and select [Turn Wi-Fi On].

3

Find the SSID from step 1 on the list.
Click it to highlight it.

4

Enter the KEY from step 1 into the Password entry box, check [Remember this network], and click [Join].

It will take several seconds for configuration to complete.

Chapter 6 - Troubleshooting

Cannot connect to the Internet over wired connection.

- Make sure that your AirStation is plugged in!
- Check that the status LEDs of your AirStation are lit as below:

Power	Green LED is on.
Wireless	Green LED on or flashing
Router	Green LED may be on or off
Diag	Off

- Make sure that your computer is set to [obtain an IP address automatically]. See page 101 for more information.
- Restart your AirStation.

Cannot access the web-based configuration interface.

- Open the configuration interface by following the procedure on page 23.
- Enter the correct user name and password to log in to the configuration interface.
  If you are using AirStation with factory default settings, enter "root" (lower case) for the username and leave the password blank (enter nothing).
- Verify that your web browser is not set to use proxies.
- Make sure that your computer is configured to [Obtain an IP Address Automatically]. (page 101)
- Restart your AirStation.

Cannot connect to the network wirelessly.

- Configure your wireless device with the same SSID, encryption type, and encryption key as used by your AirStation.

  The factory defaults are:

SSID -	Printed on the label of the AirStation.
Encryption Type -	WPA/WPA2 mixed mode - PSK (Connect with either WPA-PSK TKIP or WPA2-PSK AES).
Encryption Key -	Printed on the label of the AirStation.

  Note: Encryption is disabled by default in Asia Pacific.

- Place your AirStation and wireless devices 2 - 10 feet apart.
- Restart your AirStation.

You forgot AirStation's SSID, Encryption Key, or Password.

Hold down the Reset button (page 105) on your AirStation for 3 seconds to initialize its settings. All settings, including your password, SSID, and encryption key will be initialized to their defaults. The followings are the factory default settings of the AirStation.

SSID -	Printed on the label of the AirStation.
Encryption Type -	WPA/WPA2 mixed mode - PSK (Connect with either WPA-PSK TKIP or WPA2-PSK AES).
Encryption Key -	Printed on the label of the AirStation. (Encryption is disabled by default for Asia Pacific AirStations.)

The link speed is slower than 150 Mbps (Maximum link speed is only 72Mbps).

By default, the AirStation's 150 Mbps mode is not enabled. To enable it, use the following procedure:

1. Open the configuration interface of your AirStation (page 23).
2. Click [Wireless SSID & Channel (11n 150Mbps Mode)] in Easy Setup.
3. Change the value in [150 Mbps Mode] - [Band Width] to 40 MHz and click [Apply].

If you still cannot connect at 150 Mbps, check the settings of your wireless client device.

Other Tips

Issue:

I reset my wireless router to factory settings and forgot how to log in.

Answer:

Open your browser, enter 192.168.11.1 as the browser address, then press the Enter key. You will be prompted to log in. Enter "root" for the username and leave the password box empty (no password). Click [OK] to log in. The option to reset your password will be available on the first page.

Issue:

How do I forward ports on my wireless router for my gaming console?

Answer:

Log in to the router. From the home page, go to the Internet Game/ Port Mapping section. Enter the port that needs to be forwarded and the IP address of the gaming console.

Issue:

How do I enable or modify encryption settings on the wireless router?

Answer:

Log in to the wireless router with your browser. Go to the Wireless Config tab and then select the Basic tab. Buffalo recommends the use of WPA/WPA2 mixed for wireless encryption. The passphrase/ key should be at least 8 characters in length.

Issue:

How do I change my wireless router's broadcasted network name (SSID)?

Answer:

Log in to the wireless router with your browser. Navigate to Wireless Config - Basic. Find the SSID setting. Select [Use] and enter the new name for your network. Click [Apply]. Once the wireless router has rebooted, you will need reconnect any wireless clients to the AirStation using the new network name. The encryption key will still be the same.

Issue:

What can I do if my wireless connection drops randomly or seems slow?

Answer:

There are many environmental factors that may affect this behavior. First, ensure the issue is not range related by locating the wireless router and the device dropping connection in closer proximity and check whether the connection drops continue.
In some cases, interference from other wireless networks or sources such as 2.4 GHz wireless phones may impact performance. To work around this scenario, change the wireless channel used by your wireless router.
Log in to the wireless router with your browser. Click on the Wireless Config tab and then the Basic tab. The Wireless Channel setting can be selected from channels 1 to 11. If an Auto-Channel option is available, attempt to use this option to remedy the problem. If Auto-Channel is unavailable, manually select an alternate channel and click [Apply].

Issue:

Though I am able to successfully make a connection with my wireless router, I am unable to access the Internet with my web browser.

Answer:

First, power off the Cable or DSL modem, the wireless router, and your computer. Move the router's mode switch to the *on* position. Verify that the modem is connected to the wireless router with an Ethernet cable to the WAN port. Power on the modem and wait one minute. Power on the wireless router and wait another minute. Power on the computer. Open a browser on the computer and navigate to a familiar website to verify whether the Internet connection is functioning normally.
If after these steps, an Internet connection is still unavailable, power off the Cable or DSL modem and computer again and directly connect your computer to the Cable or DSL modem with a cable between the computer and the port on the modem. Power on the modem and wait one minute. Power on the computer and again check for an Internet connection.
If an Internet connection IS NOT available with a direct connection to the computer, please call the Internet Service Provider who installed the modem.
If an Internet connection IS available with a direct connection to the computer, please call our customer support.

Issue:

Where can I download the latest drivers, firmware, and instructions for my Buffalo wireless products?

Answer:

The latest drivers and firmware are available online at
www.buffalotech.com

Appendix A - Specifications

Wireless LAN Interface	
Standard Compliance	IEEE802.11b / IEEE802.11g / IEEE802.11n technology
Transmission Method	Direct Sequence Spread Spectrum (DSSS), OFDM, SISO
Frequency Range	2,412 - 2,462 MHz (Channels 1 - 11)
Transmission Rate	802.11b/g 54, 48, 36, 24, 18, 12, 9, 6, 11, 5.5, 2, 1 Mbps 802.11n 20 MHz Channel (LongGI)65,58.5,52,39,26,19.5,13,6.5(1 stream) (ShortGI)72.2,65.57.8,43.3,28.9,21.7,14.4,7.2(1 steam) 40 MHz Channel (LongGI)135,121.5,108,61,54,40.5,27,13.5(1 stream) (ShortGI)150,135,120,90,60,45,30,15(1 stream)
Access Mode	Infrastructure Mode
Security	AOSS, WPA2-PSK (TKIP/AES), WPA/WPA2 mixed PSK, WPA-PSK (TKIP/AES), 128/64 bit WEP, Mac Address Filter
Wired LAN Interface	
Standard Compliance	IEEE802.3u (100BASE-TX), IEEE802.3 (10BASE-T)
Transmission Rate	10 / 100 Mbps
Transmission Encoding	100BASE-TX 4B5B/MLT-3, 10BASE-T Manchester Cording
Access Method	CSMA/CD
Speed and Flow Control	10/100, Auto Sensing, Auto MDIX
Number of LAN Ports	4
LAN Port Connector	RJ-45
Other	
Power Supply	External AC 100-240V Universal, 50/60 Hz
Power Consumption	WCR-GN : Approx. 5.8 W (Max) WCR-HP-GN : Approx. 7.4 W (Max)
Dimensions	WCR-GN : 118 mm x 104 mm x 23 mm (4.6 x 4.1 x 0.9 in.) WCR-HP-GN : 130 mm x 105 mm x 23 mm (5.1 x 4.1 x 0.9 in.)
Weight	WCR-GN : 144 g (5.08 oz.) without stand WCR-HP-GN : 146 g (5.15 oz.) without stand and antenna
Operating Environment	0 - 40° C (32 - 104° F), 20 - 80% (non-condensing)

Appendix B - Default Configuration Settings

Feature	Parameter	Default Setting
Internet Router Mode only	Method of Acquiring IP Address	Easy Setup (Internet Connection Wizard)
	Default Gateway	none
	Address of DNS Name Server	none
	Internet MAC Address	Use default MAC Address
	MTU Size of Internet Port	1500 Bytes
PPPoE Router Mode only	Name of Connection	none
	User Name	none
	Password	none
	Service Name	none
	Connection Type	Continuous Connection
	Automatic disconnection	Disconnect Condition When both incoming and outgoing traffic stops Disconnect Time 5 Minutes
	Authorization	Automatic Authorization
	MTU Size	1454 Bytes
	MRU size	1454 Bytes
	Keep Alive	Enabled
DDNS Router Mode only	Dynamic DNS Service	Disabled
	Current Dynamic DNS Information	none
LAN	LAN Side IP Address	Router Mode: 192.168.11.1 (255.255.255.0) Bridge Mode 192.168.11.100 (255.255.255.0)
	DHCP Server Router Mode only	Enabled
	DHCP IP Address Pool Router Mode only	192.168.11.2 for up to 64 addresses
	Lease Period Router Mode only	48 hours

Feature	Parameter	Default Setting
	Default Gateway Router Mode only	AirStation's IP Address
	DNS Servers Router Mode only	AirStation's IP Address
	WINZ Server Router Mode only	Assigned IP address
	Domain Name Router Mode only	Assigned Domain Name
	Default Gateway Bridge Mode only	none
	DNS Server Address Bridge Mode only	none
DHCP Lease Router Mode only	Current DHCP Client Information	none
NAT Router Mode only	Address Translation	Enabled
	Log Output of Deleted Packets	Disabled
Route	Routing Information	none
WPS	WPS	Enabled
	External Registrar	Enabled
	AirStation PIN	An 8-digit random value (Printed on the label of the AirStation)
	WPS Security Information	WPS status: configured or unconfigured

Feature	Parameter	Default Setting
AOSS	Encryption Type of Exclusive SSID for WEP	none
	Encryption level expansion function	Enabled
	Dedicated WEP SSID isolation	Disabled
	AOSS Button on the AirStation Unit	Enabled
Basic	Wireless Radio	Enabled
	Wireless Channel	Auto Channel
	150Mbps Mode	Band Width: 20MHz Extension Channel: -
	Broadcast SSID	Allow
	Separate feature	For US/EU SSID1: not used SSID2: used For AP/RU SSID1: used SSID2: not used
	SSID	For US/EU SSID1: not used SSID2: Configure AirStation's MAC address + [-1] SSID3: not used SSID4: not used For AP/RU SSID1: Configure AirStation's MAC address SSID2: not used SSID3: not used SSID4: not used
	Authentication	For US/EU WPA/WPA2 mixed mode-PSK For AP/RU No authentication
	Encryption	For US/EU TKIP/AES mixed mode For AP/RU No encryption
	Rekey interval	60 minutes

Feature	Parameter	Default Setting		
Advanced	Multicast Rate	1Mbps		
	DTIM Period	1		
	Privacy Separator	Disabled		
WMM	WMM-EDCA Parameters (Priority AC_BK (Low))		For AP	For STA
		CWmin	15	15
		CWmax	1023	1023
		AIFSN	7	7
		TXOP Limit	0	0
	WMM-EDCA Parameters (Priority AC_BE (Normal))		For AP	For STA
		CWmin	15	15
		CWmax	63	1023
		AIFSN	3	3
		TXOP Limit	0	0
	WMM-EDCA Parameters (Priority AC_VI (High))		For AP	For STA
		CWmin	7	7
		CWmax	15	15
		AIFSN	1	2
		TXOP Limit	94	94
	WMM-EDCA Parameters (Priority AC_VO (Highest))		For AP	For STA
		CWmin	3	3
		CWmax	7	7
		AIFSN	1	2
		TXOP Limit	47	47
MAC Filter	Enforce MAC Filter	Disabled		
	Registration List	none		
WDS	WDS	not used		
Firewall Router Mode only	Log Output	Disabled		
	Basic Rules	Prohibit NBT and Microsoft-DS Routing Reject IDENT Requests Block Ping from Internet		Disabled Enabled Enabled
IP Filter Router Mode only	Log Output	Disabled		
	IP Filter Information	none		

Feature	Parameter	Default Setting
VPN Pass Through Router Mode only	IPv6 Pass Through	Disabled
	PPPoE Pass Through	Disabled
	PPTP Pass Through	Disabled
Port Forwarding Router Mode only	Port Forwarding Registration Information	none
DMZ Router Mode only	IP Address of DMZ	none
UPnP Router Mode only	UPnP	Enabled
QoS Router Mode only	QoS for transmission to the Internet	Disabled
Name	AirStation Name	AP + AirStation's MAC Address
Password	Administrator Name	root (fixed)
	Administrator Password	none
Time/Date	Local Date	2010 Year 1 Month 1 Day
	Local Time	0 Hour 0 Minute 0 Seconds
	Time Zone	(GMT−00:00) Greenwich Mean Time, London
NTP	NTP Functionality	Enabled
	NTP Server	time, nist, gov
	Update Interval	24 hours
Access	Log Output	Disabled
	Limitation Item	Prohibit configuration from wireless LAN Disabled Prohibit configuration from wired LAN Disabled Permit configuration from wired Internet Disabled
Log	Log Transfer	Disabled
	Syslog Server	none
	Transfer Logs	Router Mode: Address Translation, IP Filter, Firewall, PPPoE Client, Dynamic DNS, DHCP Client, DHCP Server, AOSS, Wireless Client, Authentication, Setting Changes, System Boot, NTP Client, and Wired Link Bridge Mode: IP Filter, DHCP Client, AOSS, Wireless Client, Authentication, Setting Changes, System Boot, NTP Client, and Wired Link

Appendix C - Checking Wireless Signal Quality

For users of Windows 7, Vista, or Mac OS X (10.4 and later), software supplied with the AirStation can be used to check the quality and strength of the wireless signal.

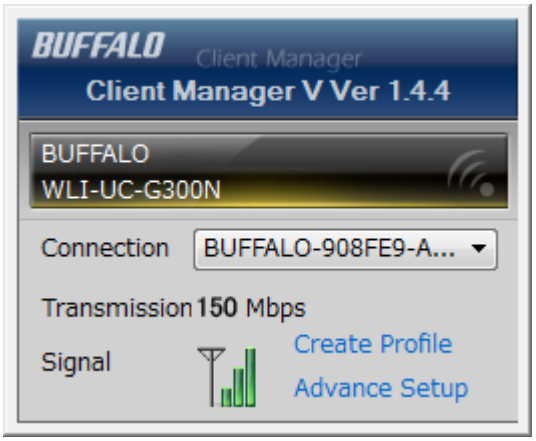
Windows 7/Vista

Note: · If Client Manager V is not already installed, install it from the utility CD.

· Client Manager V does not support Windows XP.

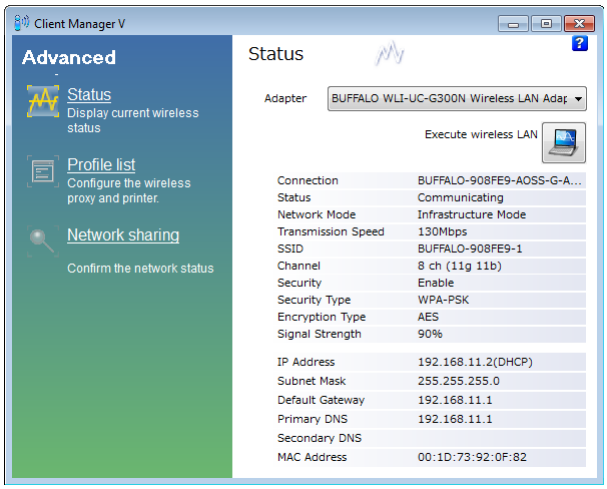
1 Click [Start] > [All Programs] > [BUFFALO] > [AirStation Utility] > [Client Manager V].

2



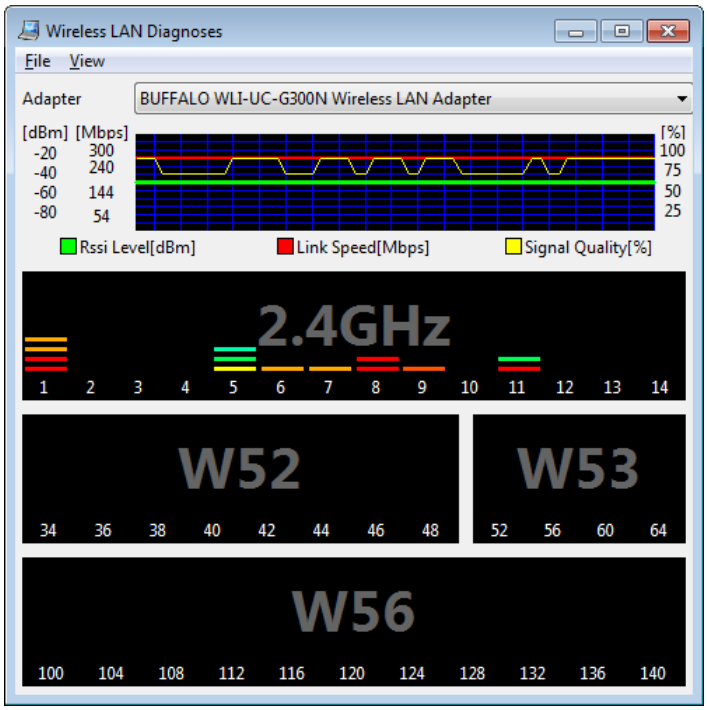
Click [Advanced Setup].

3



When the Client Manager V status screen is displayed, click .

4



Parameter	Meaning
Connection status	Signal strength (dBm), link speed (Mbps), and signal quality (%) are displayed in one-minute intervals on a real-time graph.
Usage status by channel	The 11b/11g display shows usage in the 2.4 GHz band channels 1 to 11.

Colors are used to indicate the signal strength of the access point. Colors closer to red indicate an access point with a stronger signal strength, and colors closer to blue indicate an access point with a weaker signal strength.

Mac OS X

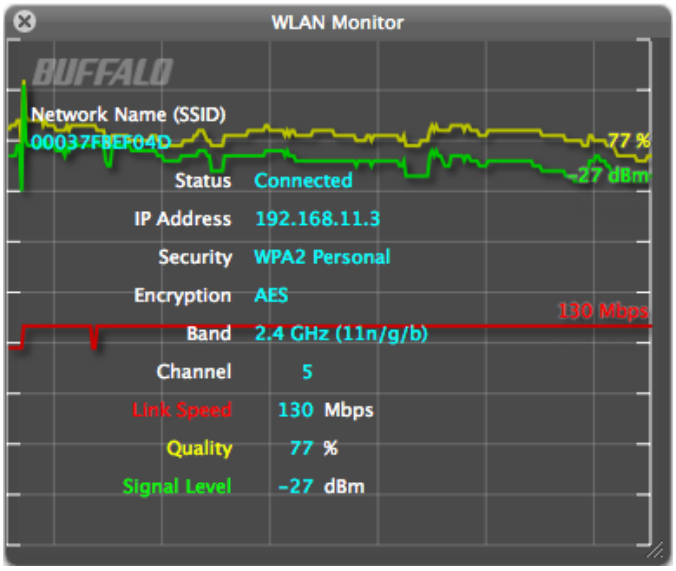
1 Load the utility CD into your Macintosh.

2 From the menu bar, click [Go] > [Computer].

3 Double-click the CD icon, and then double-click [WLAN Monitor] in the "Mac" folder.

4 The software license screen is displayed when starting for the first time only. Click [Agree] to proceed.

5



Parameter	Meaning
Network name (SSID)	This displays the SSID of the AirStation that is currently connected.
Status	This indicates the current connection status.
IP Address	This indicates the IP address of the current wireless network port (Wi-Fi).
Security	This indicates the authentication method for the current connection target.
Encryption	This displays the encryption type for the current connection target.
Band	This displays the wireless band for the current connection target.
Channel	This displays the wireless channel for the current connection target.
Link Speed (Mbps)	This displays the current link speed.
Quality (%)	This displays the current signal quality.
Signal Level (dBm)	This indicates the strength of the current signal.

Appendix D - TCP/IP Settings in Windows

Windows 7

To configure TCP/IP in Windows 7, follow the procedure below.

1 Click [Start] > [Control Panel] > [Network and Internet].

2 Double-click [Network and Sharing Center].

3 Click [Change Adapter Settings] on the left side menu.

4 Right-click on [Local Area Connection], then click [Properties].

5 If the message "Windows needs your permission to continue" appears, click [Continue].

6 Select [Internet Protocol Version 4 (TCP/IPv4)] then click [Properties].

7 To have DHCP set your IP address settings automatically, check [Obtain an IP address automatically] and [Obtain DNS server address automatically].

To set your IP address settings manually, enter values for each settings. Example:

If the router's IP address is 192.168.11.1,

IP address	192.168.11.80
Subnet mask	255.255.255.0
Default gateway	192.168.11.1
Preferred DNS server	192.168.11.1
Alternate DNS server	blank

8 Click [OK].

Windows Vista

To configure TCP/IP in Windows Vista, follow the procedure below.

1 Click [Start] > [Settings] > [Control Panel].

2 Double-click [Network and Sharing Center].

3 Click [Manage network connections] on the left side menu.

4 Right click on [Local Area Connection], then click [Properties].

5 When the message [Windows needs your permission to continue], click [Continue].

6 Select [Internet Protocol Version 4 (TCP/IPv4)], then click [Properties].

7 To have DHCP set your IP address settings automatically, check [Obtain an IP address automatically] and [Obtain DNS server address automatically].

To set your IP address settings manually, enter values for each settings. Example:

If the router's IP address is 192.168.11.1,

IP address	192.168.11.80
Subnet mask	255.255.255.0
Default gateway	192.168.11.1
Preferred DNS server	192.168.11.1
Alternate DNS server	blank

8 Click [Close].

Windows XP

To configure TCP/IP in Windows XP, follow the procedure below.

1 Click [Start] > [Settings] > [Control Panel].

2 Double-click [Network].

3 Right click on [Local Area Connection], then click [Properties].

4 Select [Internet Protocol (TCP/IP)], then click [Properties].

5 To have DHCP set your IP address settings automatically, check [Obtain an IP address automatically] and [Obtain DNS server address automatically].

To set your IP address settings manually, enter values for each setting. Example:.

If the router's IP address is 192.168.11.1,

IP address	192.168.11.80
Subnet mask	255.255.255.0
Default gateway	192.168.11.1
Preferred DNS server	192.168.11.1
Alternate DNS server	blank

6 Click [Close].

Mac OS X

To configure TCP/IP in Mac OS X, follow the procedure below.

1 Click [Apple menu] > [System Preferences…].

2 Click [Network].

3 Click [Ethernet].

4 To have DHCP set your IP address settings automatically, select [Using DHCP] in the Configure IPv4 field.

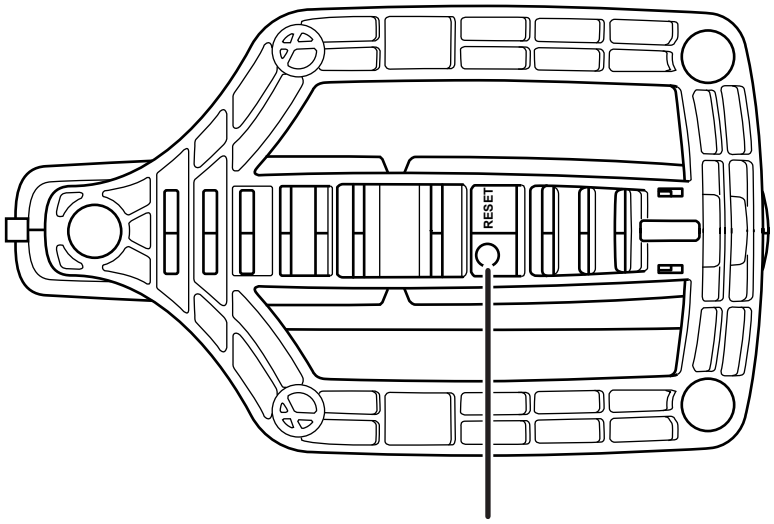
To set your IP address settings manually, select [Manually] in the Configure IPv4 field and enter values for each setting. Examples:

If the router's IP address is 192.168.11.1,

IP Address	192.168.11.80
Subnet Mask	255.255.255.0
Router	192.168.11.1
DNS Server	192.168.11.1
Search Domains	blank

5 Click [Apply].

Appendix E - Restoring the Default Configuration



Hold down this button for 3 seconds. The AirStation will be initialized.

Appendix F - Regulatory Compliance Information

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC ID:

WCR-GN: FDI-09102082-0
WCR-HP-GN: FDI-09101884-0

Important Note - FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for uncontrolled equipment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

European Union Notice:

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

- EN60950-1: 2006 + A11: 2009
  Safety of Information Technology Equipment
- EN 50385: (2002-08)
  Product standard to demonstrate the compliance of radio base stations and fixed terminal stations for wireless telecommunication systems with the basic restrictions or the reference levels related to human exposure to radio frequency electromagnetic fields (110MHz - 40 GHz) - General public
- EN 300 328 V1.7.1 (2006-10)
  Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
- EN 301 489-1 V1.8.1 (2008-04)
  Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
- EN 301 489-17 V2.1.1 (2009-05)
  Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for 2,4 GHz wideband transmission systems and 5 GHz high performance RLAN equipment and 5,8 GHz Broadband Data Transmitting Systems

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.

CE 0560 ⓘ

Česky[Czech]
Buffalo Technology Inc. tímto prohlašuje, že tento AirStation WCR-GN / WCR-HP-GN je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.

Dansk[Danish]
Undertegnede Buffalo Technology Inc. erklærer herved, at følgende udstyr AirStation WCR-GN / WCR-HP-GN overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.

Deutsch[German]
Hiermit erklärt Buffalo Technology Inc. dass sich das Gerät AirStation WCR-GN / WCR-HP-GN in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.

Eesti[Estonian]
Käesolevaga kinnitab Buffalo Technology Inc. seadme AirStation WCR-GN / WCR-HP-GN vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.

English
Hereby, Buffalo Technology Inc. declares that this AirStation WCR-GN / WCR-HP-GN is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Español[Spanish]
Por medio de la presente Buffalo Technology Inc. declara que el AirStation WCR-GN / WCR-HP-GN cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.

Ελληνική[Greek]
ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Buffalo Technology Inc. ΔΗΛΩΝΕΙ ΟΤΙ AirStation WCR-GN / WCR-HP-GN ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.

Français[French]
Par la présente Buffalo Technology Inc. déclare que l'appareil AirStation WCR-GN / WCR-HP-GN est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.

Italiano[Italian]
Con la presente Buffalo Technology Inc. dichiara che questo AirStation WCR-GN / WCR-HP-GN è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.

Latviski[Latvian]

Ar šo Buffalo Technology Inc. deklarē, ka AirStation WCR-GN / WCR-HP-GN atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.

Lietuvių[Lithuanian]
Šiuo Buffalo Technology Inc. deklaruoja, kad šis AirStation WCR-GN / WCR-HP-GN atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.

Nederlands[Dutch]
Hierbij verklaart Buffalo Technology Inc. dat het toestel AirStation WCR-GN / WCR-HP-GN in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.

Malti[Maltese]
Hawnhekk, Buffalo Technology Inc. , jiddikjara li dan AirStation WCR-GN / WCR-HP-GN jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.

Magyar[Hungarian]
Alulírott, Buffalo Technology Inc. nyilatkozom, hogy a AirStation WCR-GN / WCR-HP-GN megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.

Polski[Polish]
Niniejszym, Buffalo Technology Inc. , deklaruję, że AirStation WCR-GN / WCR-HP-GN spełnia wymagania zasadnicze oraz stosowne postanowienia zawarte Dyrektywie 1999/5/EC.

Português[Portuguese]
Buffalo Technology Inc. declara que este AirStation WCR-GN / WCR-HP-GN está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.

Slovensko[Slovenian]
Buffalo Technology Inc. izjavlja, da je ta AirStation WCR-GN / WCR-HP-GN v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.

Slovensky[Slovak]
Buffalo Technology Inc. týmto vyhlasuje, že AirStation WCR-GN / WCR-HP-GN spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.

Suomi[Finnish]
Buffalo Technology Inc. vakuuttaa täten että AirStation WCR-GN / WCR-HP-GN tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.

Svensk[Swedish]
Härmed intygar Buffalo Technology Inc. att denna AirStation WCR-GN / WCR-HP-GN står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

Industry Canada statement

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE: Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This device has been designed to operate with an antenna having a maximum gain of 5 dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

根據 NCC 低功率電波輻射性電機管制辦法：

第十二條：
經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條：
低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

기종별	사 용 자 안 내 문
B 급 기기 (가정용 정보통신기기)	이 기기는 가정용 (B 급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며 , 모든 지역에서 사용할 수 있습니다 .

Brasil

Este equipamento opera em caráter secundário, isto é, não tem direito à proteção contra interferência prejudicial, mesmo de estações do mesmo tipo e não pode causar interferência a sistemas operando em caráter primário.

Appendix G - Environmental Information

- The equipment that you have purchased has required the extraction and use of natural resources for its production.
- The equipment may contain hazardous substances that could impact health and the environment.
- In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, we encourage you to use the appropriate take-back systems.
- The take-back systems will reuse or recycle most of the materials of your end life equipment in a sound way.
- The crossed-out wheeled bin symbol invites you to use those systems.

- If you need more information on the collection, reuse and recycling systems, please contact your local or regional waste administration.

Appendix H - GPL Information

The source code for Buffalo products that use GPL code is available at *http://opensource.buffalo.jp/* .